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MILITARY SEALIFT COMMAND

OFFICER TEXT AND OFFICER-ENLISTED CORRESPONDENCE COURSE

NAVEDTRA 10829-D1

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Although the words "he," "him," and "his" are used sparingly in this manual to enhance communication, they are not intended to be gender driven nor to affront or discriminate against anyone reading *Military Sealift Command*, NAVEDTRA 10829-D1.

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PREFACE

This Officer Text and Officer-Enlisted Correspondence Course (OT/OCC-ECC) form a self-study package that will acquaint officers and enlisted personnel of the regular Navy, Naval Reserve and other interested personnel with the United States Navy's Military Sealift Command. The correspondence course for all military personnel qualifying for MSC mobilization billets and others as appropriate, will be based on this textbook.

As an introductory text, *Military Sealift Command* briefly describes the origin of MSC, its mission and responsibilities as well as its varied operations and functions. MSC's inter-relationship with other Department of Defense agencies and other governmental agencies is also covered.

Individuals who complete a study of this textbook will be well prepared for effective participation in other phases of a comprehensive MSC training program. Completion of this course is one of the elements necesssary for officers to qualify for appropriate Naval Officer Billet Classifications (NOBCs) and for enlisted personnel to earn Naval Enlisted Classifications (NECs).

This publication was prepared by the Military Sealift Command, Naval Research Division, Education and Training Branch, Washington, D.C. 20390 for the Chief of Naval Education and Training.

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THE UNITED STATES NAVY

GUARDIAN OF OUR COUNTRY

The United States Navy is responsible for maintaining control of the sea and is a ready force on watch at home and overseas, capable of strong action to preserve the peace or of instant offensive action to win in war.

It is upon the maintenance of this control that our country's glorious future depends; the United States Navy exists to make it so.

WE SERVE WITH HONOR

Tradition, valor, and victory are the Navy's heritage from the past. To these may be added dedication, discipline, and vigilance as the watchwords of the present and the future.

At home or on distant stations we serve with pride, confident in the respect of our country, our shipmates, and our families.

Our responsibilities sober us; our adversities strengthen us.

Service to God and Country is our special privilege. We serve with honor.

THE FUTURE OF THE NAVY

The Navy will always employ new weapons, new techniques, and greater power to protect and defend the United States on the sea, under the sea, and in the air.

Now and in the future, control of the sea gives the United States her greatest advantage for the maintenance of peace and for victory in war.

Mobility, surprise, dispersal, and offensive power are the keynotes of the new Navy. The roots of the Navy lie in a strong belief in the future, in continued dedication to our tasks, and in reflection on our heritage from the past.

Never have our opportunities and our responsibilities been greater.

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NOTICE

This text is not to be considered a substitute for authoritative publications, directives or instructions issued by the Commander, Military Sealift Command; the Chief of Naval Operations; the Secretary of the Navy; the Secretary of Defense; or other competent authority, nor is it to be considered an authority in itself.

CHAPTER 1

HISTORY OF OCEAN TRANSPORTATION

Perspective is vital to any writer or student of history. The test of time is a true measure of persons and their deeds, the impact of development. An objective assessment is best made long after the event or the lives of participants have ended.

Maritime history covers thousands of years and many civilizations. It was only a few years ago, as historians think of time, that the world was made up of a number of widely dispersed continents. Separated by oceans whose range or size were unknown to inhabitants of the land masses on which they touched, each continent was in a very real sense a world of its own.

Then came the development of aircraft, of instantaneous global communication, of space flight and landings on the Moon. Planet Earth became a single unit whose people traversed its entire surface in hours rather than weeks or months. We now perceive it as only a small part of a vast and still-to-be-explored universe.

Man and his mobility have come a long way from the time an early forebear discovered that he could move downstream by clinging to a floating log or bundle of reeds. He learned to use inflated animal skins, to hollow out logs in the form of dugout canoes (figure 1-1)—still used in parts of our modern world—and to equip early waterborne platforms with poles, oars, and, eventually, sails.

Some evidence suggests that the Egyptians may have reached Western Europe and what is now Great Britain as early as the third or second millennium B.C. The Carvels they sailed on voyages, then as daring as a flight to the Moon, transported people looking for new lands, new materials, and new wealth. Waging war and creating and expanding commerce were purposes important to early man, and they have continued to be throughout history.

History tells us that the Pharaoh Snefru was lauded for the "bringing of 40 ships filled with cedar logs" to Egypt as early as 2560 B.C. A century later, Pharaoh Sahure used a fleet of ocean-going transports to lift soldiers to battle in Asia.

The contributions of the Greeks and Phoenicians and the conquest of their fellow men are colorful chapters in maritime history, including accounts of the successful Greek siege against previously impregnable Troy in the 12th century B.C. The Phoenicians at the eastern end of the Mediterranean Sea deployed ships to all parts of the then-known world, bringing back tin from Britain, amber from the Baltic nations, slaves and ivory from the African nations, and gold, spices, and precious stones from India.

Then came the age of the Romans, whose dominance lasted over 5 centuries following the defeat of ancient rival Carthage—founded by the Phoenicians in an area now known as Tunisia. The Roman navy cleared the Mediterranean of pirates and transported its legions by sea to the far reaches of the Roman Empire.

Control of what the Romans referred to as *Mare Nostrum*, Our Sea, faltered as other nations developed their own maritime power. The Moslems came close to dominating the area after the Battle of Lepanto in October 1571.

That battle was no minor skirmish at sea. It involved 200 ships, 44,000 seamen, and 28,000 soldiers in the Christian fleet under the command of Don John of Austria. Another 250 ships, 50,000 seamen, and 25,000 marines made up the Ottoman fleet commanded by Ali Pasha.

Following the passage of the so-called Dark Ages in Europe, several city-states emerged as centers of trade and commerce, most of them adjacent to the sea which offered a means of carriage of trade between emerging world ports.

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Figure 1-1.—A dugout canoe was a means of travel.

One city-state, Venice, in the year 1400, boasted a fleet of some 3,000 merchant ships. Thirty-eight thousand seamen were a major segment of the total population of Venice at that time.

A significant step in the expansion of maritime frontiers was acquisition of the compass by Europeans by way of China, the Arabs, and the Crusaders. It opened an age of exploration which eventually resulted in the discovery of America.

In 1487, even before Columbus discovered the new land (figure 1-2), Diaz had rounded the Cape of Good Hope. Vasco da Gama went from Portugal to Africa in 1498. Equipped with a full panoply of sail and reliable alloy-cast guns small in size but superior in range, the sleek Portuguese ships routed an Arab fleet of dhows off the Malabar Coast in 1501—the first "standoff" fight at sea in world history. The result was that Portugal gained control of a trade empire running from East Africa to Japan, and included the coveted East Indies spice trade.

In the Orient and the Indian and Pacific Oceans, development of water transportation progressed at a slower pace than in the Mediterranean. Beginning with outrigger canoes and Indian catamarans (three logs lashed together to form a raft) seafarers advanced to the sampan—used primarily in coastal and on river waters—and then to relatively large sail-driven junks. Two popular designs were the Foochow and Antung junks.

China has been a dominant land power through much of the history of the Orient. Chinese trade, however, has remained largely in the hands of foreigners. Among the maritime nations that traded with China and used the oceans for carriage of that trade were Malaysia, Indians, and Arab states and, eventually, the Europeans. While Portugal was discovering and dominating the East, Spain was looking west toward a new world; Mexico, Peru, and territories north and south.

Figure 1-2.—The debarkation of Columbus, morning of October 12, 1492.

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By the mid-16th century, Portugal and Spain had been united under Philip II. But the seeds of their decline had been planted with the growth of the French, Dutch, and British navies. All sought supremacy on the seas. Spain was the first to fall. In August and September of 1588, the Spainish Armada—124 ships, 1,100 guns, 27,000 men under the Duke of Medina Sidonia—was cut in half by a combination of foul weather, superior seamanship, and better battle tactics of England's Lord Admiral Charles Howard of Effingham. Howard's lieutenants included some whose names were to become well known in naval history, Francis Drake, John Hawkins, and Maritine Frobisher. Among them they commanded a force of 197 ships carrying 2,000 guns and 16,000 men.

The English fleet, however, included only 34 real men of war. Their numbers had been augmented for the long-running battle with the Spanish Armada by armed merchantmen recruited from seaport towns all over England. That set a pattern to be repeated in the United States development as a great seapower.

The Dutch gained a major share of the Baltic, Middle East, and Far East foreign trades and supplanted the Portuguese in the East Indies spice trade, forcing a shift of England's Indian Ocean interests to India. However, they were the next to succumb, after a series of three wars at sea with England, between 1652 and 1674. As an outcome of those wars, England relinquished all claims to the East Indies. The Netherlands agreed that the West Indies belonged in England's sphere of influence, and the Dutch ceded New Amsterdam to the English who promptly renamed it New York.

The Anglo-Dutch wars were a prelude to a much longer series of seven wars in which France and England were engaged over a 126-year period extending from 1689. This began with the War of English Succession and ended with the defeat of Napoleon at Waterloo in June 1815. Britain controlled an empire on which the sun never set and which was protected by a seemingly invincible fleet.

THE AMERICAN EXPERIENCE

On the western side of the North Atlantic was a new nation, the United States of America. Eventually it was to surpass its mother country as the foremost naval and commercial power in the history of the world.

The New World colonies were discovered by European seafarers looking for trading partners, sources of raw materials, and outlets for their exports. The earliest settlements were along the coast and up the inland bays and waterways. Because colonial roads were few, early Americans depended on the rivers, lakes, and seas for trade, fishing, transportation, and communications.

The colonial shipbuilding industry was well developed by the time of the American Revolution. The 13 colonies had 2,300 ocean-going ships (figure 1-3), a third of them built in the Colonies.

The Revolutionary War was much more of a naval and maritime war than is generally realized. It began with the Battles of Lexington and Concord on April 19, 1775. Those historic engagements were preceded by the Boston Tea Party in 1773, an act of maritime defiance which

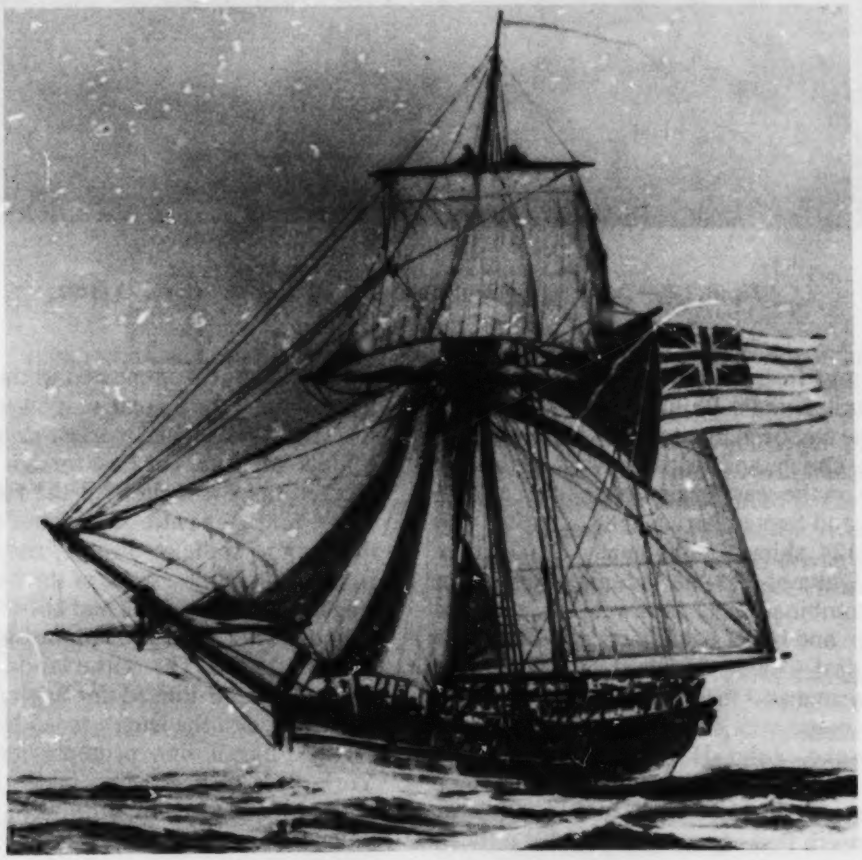

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Figure 1-3.—A 12-gun continental Navy sloop used in the American Revolution period.

led to Parliamentary passage of the hated Coercive Acts and ultimately to the dispatch of 2,000 British troops to close the Port of Boston. They were met by armed resistance from the Massachusetts militia.

WASHINGTON'S NAVY

On September 5, 1775, the Continental Army commissioned the schooner *Hannah*. Commanded by Captain Nicholas Broughton, it was the first of what was to become an eight-schooner squadron, known historically as "Washington's Navy." Less than 6 weeks later, on October 12, 1775, the Second Continental Congress formally established the Continental Navy. Two weeks later, on October 27, 1775, a three-man committee presented Congress a bill, speedily approved, to acquire 13 ships. Two additional vessels were authorized on October 30, and 13 more December 13. The latter were built as warships from the keel up.

In early 1776, the untested Continental Navy had 14 ships with a collective total of 332 guns. They faced a formidable British fleet of 89 ships fitted with 2,576 guns. The Colonials never really reduced that early number's gap. At its peak, the Continental Navy had only 34 ships (figure 1-4) and about 5,000 men. By 1781, it had been reduced to four ships. They opposed 400 Royal Navy ships, including 60 on the North American station.

PRIVATEERS IN THE REVOLUTION

The Colonial Navy, however, was bolstered by privateers, a quasi-naval force of privately

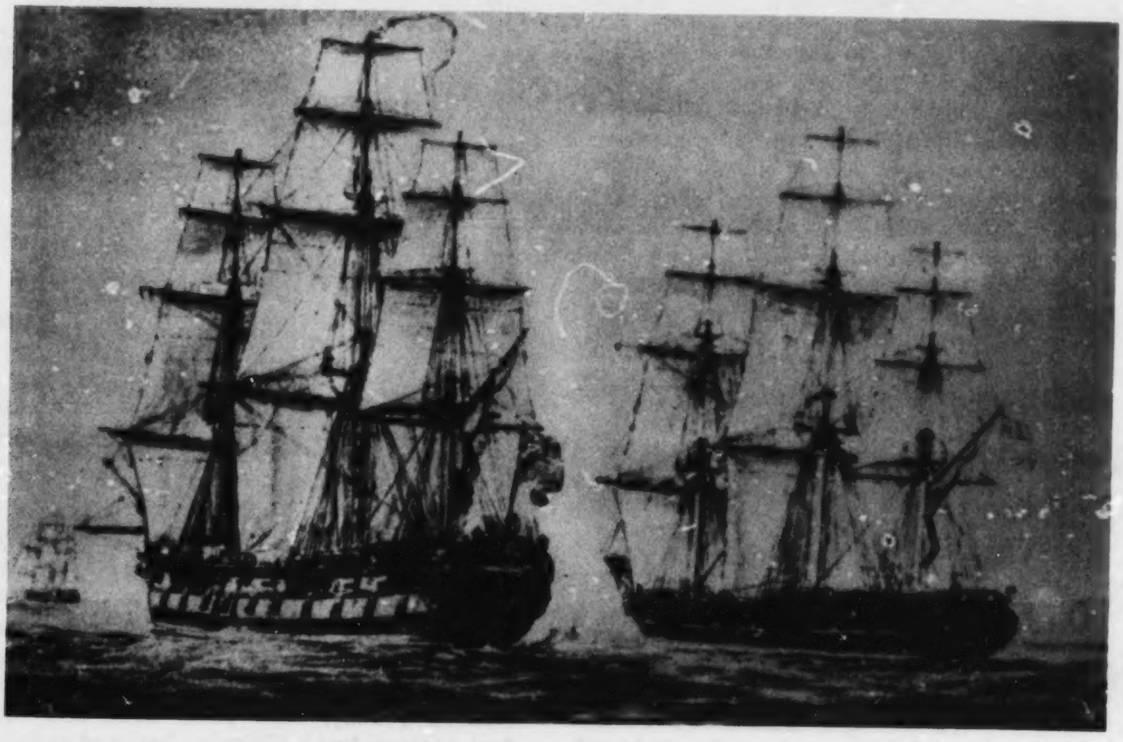

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Figure 1-4.—HMS Rainbow captures the continental frigate Hancock 8 July 1777.

owned ships. Ironically, many privateers had gained their battle experience as British subjects attacking and capturing French and Spanish merchant ships during the Seven Years' War. Some 2,000 or so privateers were commissioned by Congress and served at one time or another during the war. They captured approximately 800 British ships, four times the number seized by the Continental Navy.

As in most wars, land campaigns have received the bulk of attention from historians even though the outcome of land battles often was influenced by events at sea. Unremitting pressure on transatlantic logistics lines not only deprived the British troops of weapons, ammunition, and clothing they sorely needed, but provided those same items to Washington's men.

After the war, the Navy was demobilized, not to be reestablished until 1794. But on July 25, 1785, less than 2 months after the Continental Navy's last ship, the frigate *Alliance* was ordered to be sold, and Algerian pirates seized the American merchant schooner *Maria*. Five days later they captured the *Dauphin*, another American merchantman. A fledgling nation was learning that a Navy and merchant marine are mutually supporting. Except for short periods of time, one cannot survive without the other. Only together can they help U.S. leaders satisfy national objectives and fulfill international commitments.

To protect and encourage an American merchant marine, Congress passed a tariff in 1789 which provided that importers using U.S. flag ships would receive a 10 percent reduction in duties. The following year, the merchant ship *Columbia* arrived in Boston completing the first circumnavigation of the globe by a U.S. ship. It took 3 years.

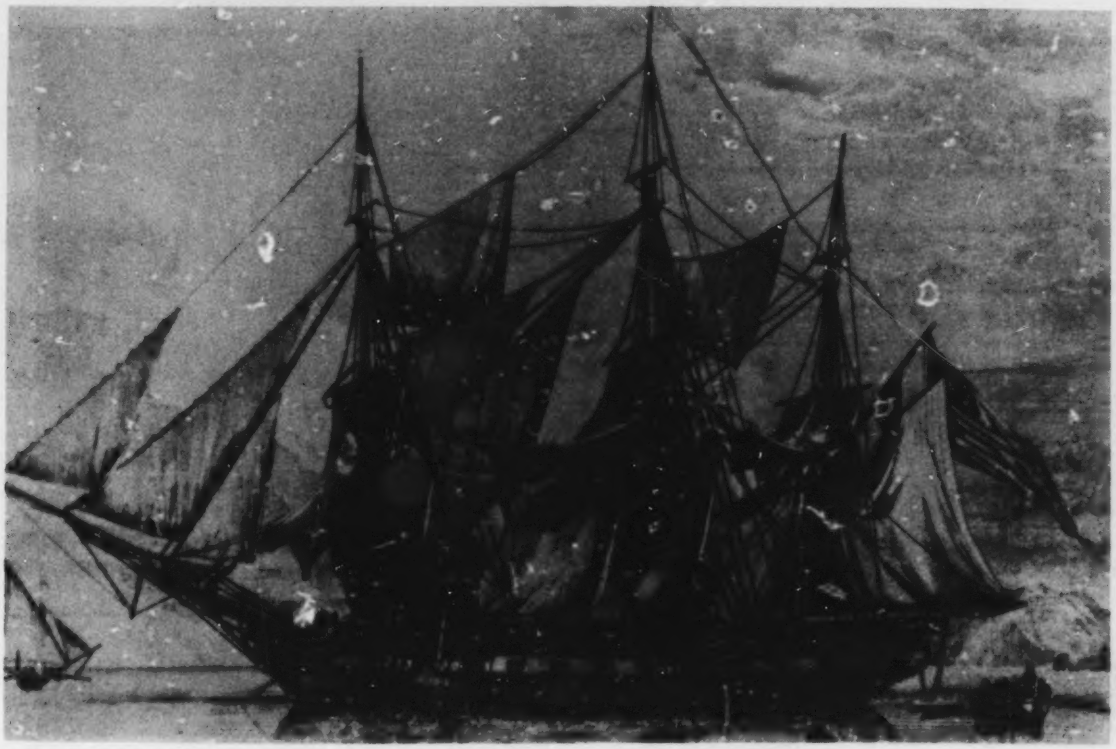

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Figure 1-5.—The USS Boston was a 28-gun frigate.

Eight more merchant ships were seized by pirates in 1793. Congress reestablished the U.S. Navy in 1794—more than 3 years after the Senate Committee on Mediterranean Trade had reported that American shipping in that area could not be protected without a naval force.

WARS WITH FRANCE AND THE BARBARY PIRATES

As often happens, conflicts between natural powers benefited a neutral third party—in this case, the United States. The American merchant marine, deprived of British naval protection after the Revolutionary War, had gone into a tailspin. But the wars between France and England in the late 18th century obliged each of those countries to rely heavily on U.S. flag merchant ships (figure 1-5) they stopped regularly; for example, in various West Indies ports despite British Orders in Council forbidding such trade.

During the period 1778-94, the American merchant marine increased from 124,000 tons to 439,000 tons. The share of U.S. imports carried on American flag ships increased from 17 to 91 percent, and U.S. flag exports rose from 30 to 86 percent.

THE WAR OF 1812

The U.S. Navy was far from ready for battle when the War of 1812 began. Only one ship, the 18-gun sloop-of-war *Wasp*, was at sea. The country was even less ready. The declaration of war passed the Senate only 19 to 13, and some in New England favored withdrawal from the Union.

The American merchant marine again served as privateers, reducing the British advantage in ship numbers. The U.S. Navy had 18 ships, the Royal Navy 1,000, including 115 ships of the line. Some 1,000 privateers and 100,000 merchant seamen accounted for almost two-thirds of the approximately 2,000 British ships captured or destroyed during the conflict. The Navy privateer force also took more than 9,200 prisoners, including hundreds of soldiers and marines, and surpassing the 5,765 enemy troops captured during the land campaigns.

The fact that U.S. Navy ships won 12 of 13 battles against their British adversaries assured that ships flying the U.S. flag would be treated with respect due a major seapower. That did not, unfortunately, hold true for freelance pirates who continued to prey on merchant shipping. Retaliatory operations by the Western navies—including a raid against pirate villages at Qualla Battoo, Sumatra, by the U.S. frigate *Potomac* in February 1832—eventually ended Oriental piracy against American and European merchant ships.

A PERIOD OF GROWTH

Thanks in large part to the efforts of Commodore Lawrence Kearney, commander (1840-42) of the East Indies Squadron, U.S. trade with China opened up. Commerce with the Far East was expanded even more by signing of the Treaty of Kanagawa by Commodore Mathew Perry on March 31, 1854. It opened trade between the United States and Japan.

There were other encouraging developments. Congress passed several laws aimed at stimulating stability and growth of the merchant marine. Technological advances also contributed to progress of the United States. The late 18th century was the era of the Baltimore clipper, a diminutive predecessor of the great clipper ships of the 19th century. It was distinguished by sharp bows and schooner-like rigging. The same characteristics enabled the mid-18th century clipper ships (figure 1-6), sleek of hull and awash with canvas from the main deck to the crow's nest, to reach speeds of 20 knots.

STEAM PROPULSION

The sailing ship, however, was as doomed as the dinosaur. Steam propulsion was used as early as 1787 to propel a 12-oared boat on the Delaware River. The British, thanks to the genius of such men as Isabard Brunel and Samuel Cunard, developed a technological superiority in steam despite earlier American successes with *Savannah* and *Clermont*. The former, an American sailing ship to which had been added an auxiliary steam engine and detachable paddle wheels which were hoisted onto the deck when the

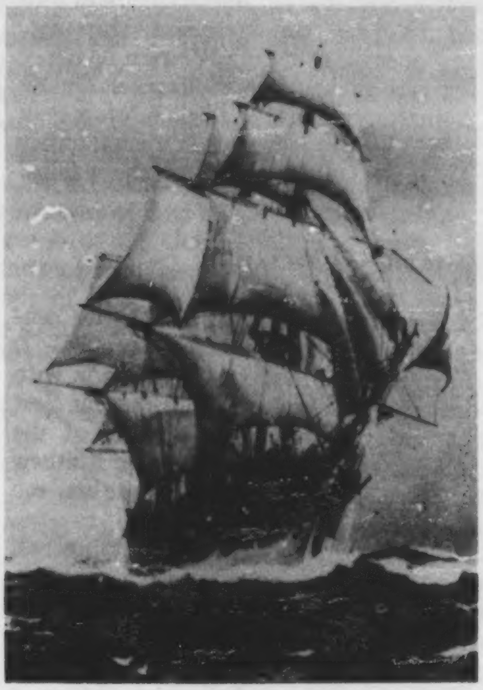

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Figure 1-6.—The Shooting Star, an extreme clipper ship built in 1851 at Medford, Mass. Its fastest voyage was when it circled the earth in 9 months and 24 days in 1853.

ship was under sail, claimed the transatlantic speed record of 1819. It steamed from Savannah to Liverpool in 21 days, almost 2 weeks faster than the average sailing ship. (Sources vary; other estimates range as high as 27 days.)

The *Clermont* was built by Robert Fulton. Earlier he had tried to interest Napoleon in a plan to cripple British seapower through use of submarines. Clermont was the first steamer to carry passengers on a regular commercial service, plying the Hudson River between New York and Albany in 1807.

Technological advances during the early 19th century included development of the screw propeller, improved ordnance, and a greatly increased use of iron and steel; first as armor over a wooden hull and eventually for the hull itself. Ships also became larger. The 700-ton sidewheeler Fulton II, a prototype steam warship, was launched in 1837. It was followed by the 1,700-ton steam warships *Mississippi* and *Missouri*, launched in 1841; the 5,000-ton French frigate *Gloire*, launched in 1859; and the 9,000-ton British armored battleship *Warrior*, launched in 1860.

THE CIVIL WAR

The U.S. Navy, like the merchant marine, had fallen far behind the Europeans when the Civil War began.

But some 400 merchant ships were converted for naval use. Merchant seamen and officers flocked to join the Navy which expanded from a pre-war total of fewer than 10,000 officers and men to a wartime peak of more than 58,000. The merchant marine kept the resource-rich North amply supplied with goods and materials needed to wage war. The South, with virtually no Navy of its own and with a merchant marine which consisted primarily of privateers in the first year of the war and blockade runners thereafter, learned its lessons in logistics the hard way. Were it not for the blockade runners and the weapons, ammunition, and foodstuffs they delivered to the beleaguered Confederacy, the war might have ended earlier than it did.

The North, however, paid a heavy price—losing about 5 percent of its merchantmen to Confederate raiders. Insurance rates soared, and many owners shifted their ships to neutral foreign registry and operated them under the so-called "flag of convenience." That, too, established a pattern still evident in the maritime industry.

PRE-WORLD WAR I NEGLECT

Westward expansion, continued immigration, and the industrialization of America contributed to an unprecedented post-Civil War increase in the U.S. foreign commerce. The combined value of exports and imports in 1800 had been $70 million. By 1900, when 28,000 ships entered American ports, the total reached $1.5 billion.

The U.S. merchant marine, however, carried only about 10 percent of the nation's overseas commerce. Despite encouraging naval developments signaled by the emergence of Theodore Roosevelt's Great White Fleet (figure 1-7) and an increase in naval expenditures from $22.0 million in 1890 (7 percent of the total Federal budget) to $117.6 million (21 percent) in 1905, there was little sentiment and less money for rebuilding the merchant fleet.

Passage of the Merchant Marine Act of 1916 gave the United States a leg upon a pre-World War II merchant shipbuilding program. Among other things, it created an Emergency Fleet Corporation which eventually built 2,318 ships. However, few were delivered in time to serve in the war.

WORLD WAR I AND AFTER

German U-boats were sinking Allied ships at the rate of 900,000 tons a month before Rear Admiral William S. Sims set up a convoy system which reduced loss rates dramatically. To cope with the shortage of merchant ships, the shipping board created by the Act of 1916 eventually increased the American merchant

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Figure 1-7.—USS Chicago (1889-1936) under sail with other Navy units.

tonnage available (figure 1-8) from 1 million tons at the time of U.S. entry into the war on April 6, 1917, to 10 million tons. Among ships built, purchased, or confiscated were wooden, prefabricated, and even concrete vessels. The most spectacular success of the convoy system involved the troop transports. No one was sunk in convoy en route to France, although the transports ferried more than 2 million men across the Atlantic.

Between the two World Wars, the U.S. Congress approved five maritime bills designed to strengthen the U.S. maritime industry. However, because of the huge ship inventory at the end of World War I, and because other maritime powers were rebuilding their own merchant fleets, relatively few merchant ships were built in the United States in the between-wars period.

In the 1920s and 1930s, the Congress passed several acts designed to strengthen the merchant marine. Among them, noted in more detail in chapter 5, were laws to help dispose of surplus merchant ships, to protect the merchant marine from foreign discrimination, and to reserve domestic cargo for U.S. flag ships.

All that was but a prelude to the landmark Merchant Marine Act of 1936 which initiated a direct subsidy program both to build and operate U.S. flag merchant ships.

THE GREATEST TEST: WORLD WAR II

The architects of the Merchant Marine Act of 1936 had not anticipated that the United States would be involved in another global war as early as 1940. The goal of the legislation authorizing construction of 500 cargo ships in 10 years was not primarily to meet wartime requirements. By 1945, some 417 ships had been built under provisions of the 1936 Act. The ships were of the Maritime Commission's "long range" design—its C1, C2, C3, and C4 types. They were, however, a small percentage of the number of ships built in the war years.

Between 1942 and 1945, 5,592 ships, 56 million deadweight tons, slid down U.S. ways. Prefabricated Liberty ships were built faster than any other type. Portions were built at different sites, then transported to a shipyard for assembly. By this method, the United States provided 2,701 Liberty ships to support the Allied cause. In the same period, U.S. yards also produced 414 Victory ships (figure 1-9) 651 tankers, and 1,409

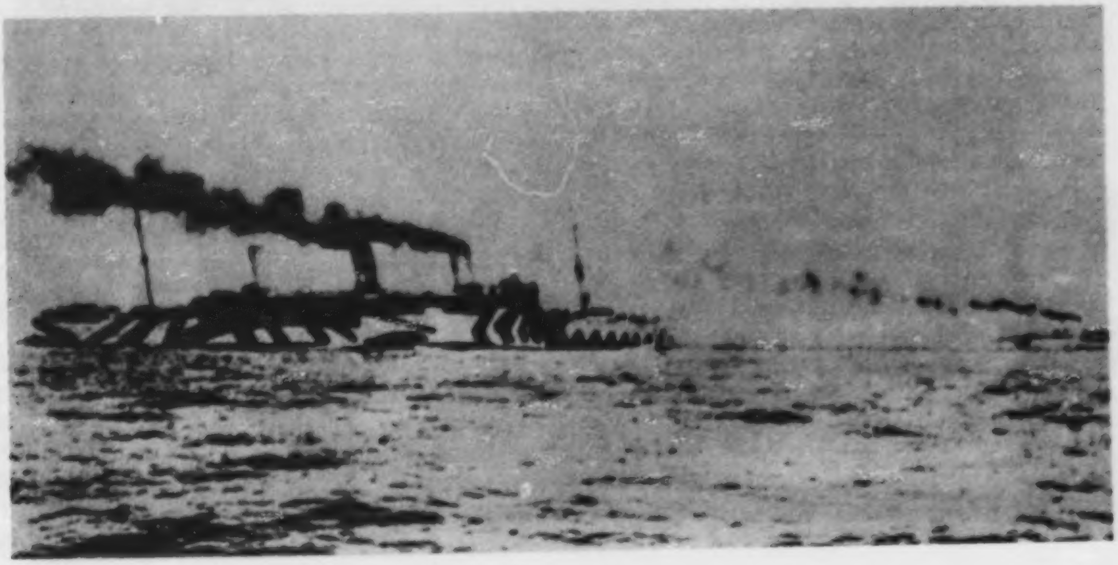

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Figure 1-8.—USS Leviathan (1917-1919) and USS Northern Pacific (1917-1919) at sea during WWI.

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Figure 1-9.—Launching of the SS Morgantown Victory, Feb. 5, 1945. In 1945, a Victory ship was put into the waters every 4 hours around the clock.

ships classified as military or minor types. As early as 1941, this country was building ships faster than the enemy could sink them. The United States built nearly 5,600 ships during World War II, and lost approximately 700.

U.S. merchant ships delivered millions of tons of war materials and more than 7 million American fighting men overseas, making more than 300,000 crossings of the Atlantic. Convoy tactics (figure 1-10), the use of radar, and new

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Figure 1-10.—A WWII Convoy, an operation in which faster ships had to reduce speed to remain with the convoy.

antisubmarine warfare techniques helped the Allies win. However, German submarines sank or destroyed 2,775 Allied merchant ships (14.6 million tons). That was 62.4 percent of Allied merchant ship losses. Overall, the Allies lost 23.4 million tons of merchant shipping.

In the Pacific, roles were reversed. U.S. forces sank or destroyed 8 million tons of Japanese merchant shipping during the war, reducing the island empire to a state of virtual starvation even before the dropping of atomic bombs.

Once again a major world war was followed by a decline of the U.S. merchant marine. Through the Merchant Ship Sales Act of 1946, Congress authorized sale of surplus ships not only to U.S. citizens but to wartime Allies. It also established a National Defense Reserve Fleet (NDRF) of ships usable for emergencies. The NDRF was made a responsibility of the Maritime Administration established in 1950 as a successor to the Maritime Commission.

Putting Government-owned ships in the NDRF helped allay shipowners' fears of competition. U.S. policy has long been to rely on privately owned ships to fulfill most military requirements and NDRF ships were to be activated only to meet emergency demands and to supplement the capability of the private sector.

COLD WAR, HOT CONFLICTS

The value of the NDRF was demonstrated during the war in Korea. More than 600 NDRF ships were activated during that conflict, most being operated by private contractors but sailing under military control and used to meet military requirements. Overall, ships delivered 99.6 percent of all cargo and 86 percent of United Nations personnel transported to Korea. Included were 22 million tons of gasoline, oil, and aviation fuel, and 54 million tons of dry cargo.

The Korean conflict also provided impetus for design and funding of the mariners, an advanced class of ship (figure 1-11) intended for logistics support. The 13,000-ton ships incorporated features considered necessary for military use. Thirty-five Mariners were constructed between 1953 and 1957.

The fastest large cargo ships in general trade at the time, Mariners became the nucleus of the nation's post-Korean conflict merchant marine modernization program. Some Mariners were operated for the Navy's Military Sealift Command under General Agency Agreements by American President Lines, Waterman Steamship Co., and other private ship operators. Others were sold to private operators who agreed to employ them on routes determined by the Maritime Administration to be essential to U.S. foreign trade.

The Korean conflict also provided a baptism of fire for the Military Sea Transportation Service, the Navy's sealift operating agency which was renamed Military Sealift Command (MSC) in 1970.

Established by the Department of Defense in August 1949 to provide ocean transportation for all U.S. Armed Forces, the agency began operations with a fleet of 174 ships. They included 50 transports, 48 tankers, and 25 cargo ships. The ships had been transferred to MSC from the Army Transport Service and Naval Transportation Service. Military and civilian crewmen also were reassigned.

Establishment of a Navy fleet-level organization with Defense-wide responsibility for ocean transportation, or sealift, recognized that military logistics had increased in scope and complexity. Reliance on the private sector expanded and became essential to U.S. security and U.S. support of its international commitments.

The Southeast Asia war was a focal point for a second and prolonged test of sealift capability. At the peak of the war, the MSC Controlled Fleet numbered 436 ships, including commercially chartered vessels and 176 ships withdrawn from NDRF. MSC delivered nearly 90 million measurement tons of weapons, ammunition, foodstuffs, and other materials to Southeast Asia, along with

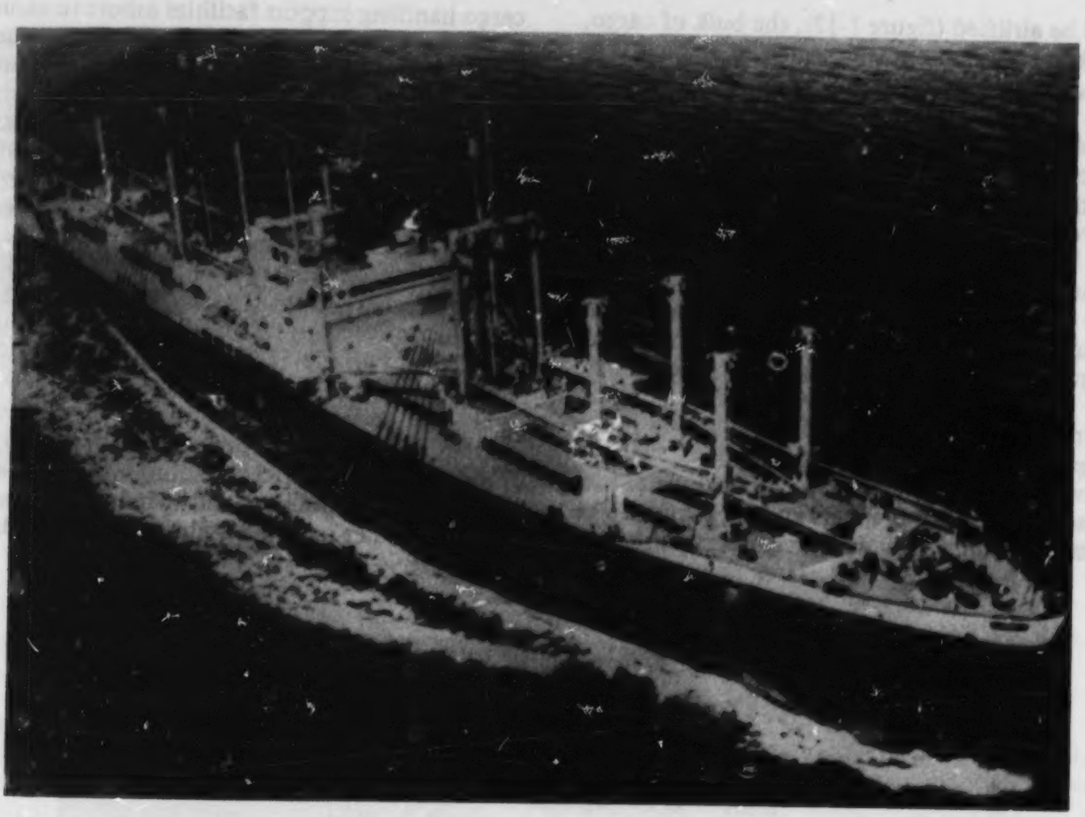

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Figure 1-11.—A Mariner class of ship built during the Korean conflict.

another 20 million long tons of petroleum products.

TODAY

From maritime history, Americans should have learned that ships and the men who sail them are essential to U.S. development and to U.S. security. Reliance on the sea for the carriage of U.S. trade and the projection of U.S. military power is unlikely to disappear no matter what the future brings in the way of transportation technology. Cargo volume and distances involved require high volume carriers—and aircraft alone cannot fulfill the requirements.

Out of the Southeast Asian war, conflicts in the Middle East, the energy problem, and the continuing search for world stability has come an increased appreciation of the vital role sealift plays in both war and peace. Continued erosion in the size of the merchant fleet coupled with funding cutbacks throughout the economy were trends opposing development of military responsiveness to a worldwide crisis. These factors resulted in formidable challenges for U.S. sealift forces in the early 1980s.

To look ahead, we must also look back. From such a historical perspective, it is clear that there is a direct relationship between a strong merchant fleet and a strong nation. The advent of airlift has altered the picture somewhat. But, airlift is an addition to the U.S. strategic mobility capability, not a replacement for sealift. Although deployed troops and high priority military cargo will be airlifted (figure 1-12), the bulk of cargo, both in peacetime and during hostilities, must continue to go by ship. Airlift alone cannot handle the tremendous volume required to support deployed forces. Thus airlift and sealift are complementary modes of military transportation. Both are essential to the mobility of U.S. Armed Forces.

Vessels now in the U.S. merchant marine are generally large, fast, and specialized. Included in the roughly 525 ships active in 1981 were more than 140 intermodal carriers—container ships (figure 1-13), barge ships, and roll/roll-off ships, all representing pioneering efforts by U.S. carriers. Although the size and speed of the newer ships are generally advantageous in national security planning, their specialized characteristics pose problems for planners and logisticians. The container ship, for example, requires sophisticated cargo handling support facilities ashore to assure its fast turnaround. In an emergency when logistical support of deployed troops must be provided through ports targeted by long-range missiles, aircraft, and saboteurs as well, necessary facilities may not be operable. In less heavily populated and in undeveloped areas of the world, they probably do not even exist. The Indian Ocean area is a typical example.

The limited number of ships in the active U.S. merchant fleet, coupled with recognition of the fact that privately owned sealift capability is vital to stability of the U.S. economy, resulted in passage of the Merchant Marine Act of 1970. It amended the Merchant Marine Act of 1936 and was intended to encourage building of new ships. Since its enactment, 186 deep draft merchant ships were under construction, and 40 more were under construction or on order at the end of 1980. But,

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Figure 1-12.—Airlift brings in the troops.

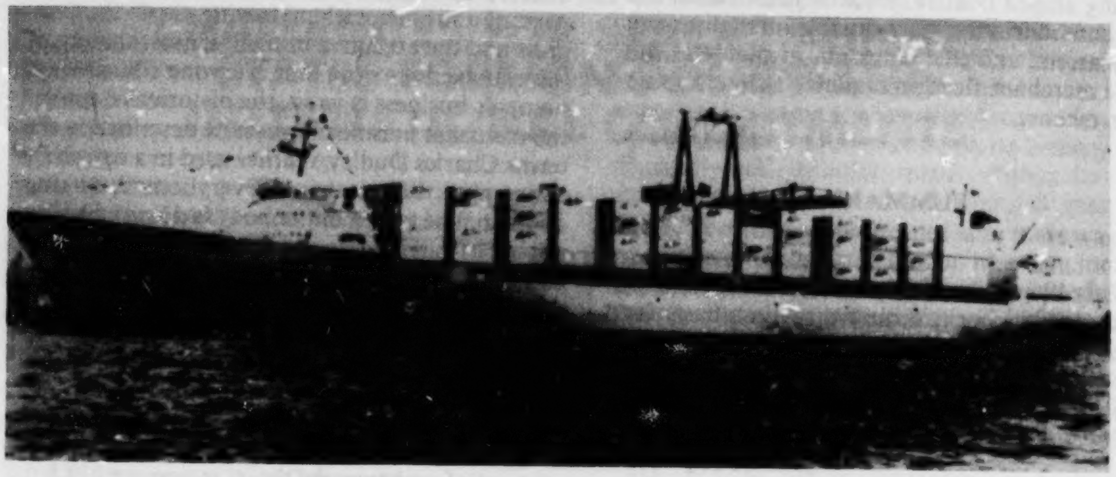

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Figure 1-13.—SS Hawaiian Progress used in the early 1970s.

many were designed for specific and for limited transportation purposes.

Other factors are vital to any study of the U.S. ability to deploy and support its Armed Forces. The USSR, for example, has expanded its own merchant marine and thus increased its ability to penetrate world trade markets—with an increase in its capability to influence the policies and actions of other nations an inevitable result.

Developing or third world nations also aspire to carry a large share of their own trade and have been developing their merchant fleets. Often they require that a large share of their imports and exports be carried in their own ships.

Competition from other countries is not limited to the carrying of cargo. It exists in the shipyards. To strengthen the shipbuilding industry, U.S. shipyards must become more competitive. Low productivity, not high wages, has become the most important problem facing the U.S. shipyards. While wages have risen in other countries competing for shipbuilding contracts, productivity in most foreign yards also has risen. It easily surpasses productivity of U.S. yards, and ships can be built in foreign yards quicker, more cheaply, and in some case better than in U.S. yards.

TOMORROW

U.S. international policy and national security are based on the concepts of strategic deterrence and strategic mobility. U.S. capability to deter a would-be aggressor and the U.S. ability to strike back require that Armed Forces be highly mobile and able to project U.S. military power anywhere in the world. That strength requires the prepositioning of military equipment and the maintaining of airlift and sealift adequate to maintain the long supply lines necessary for troop support.

Navy planning efforts aimed at solving merchant fleet problems as they affect national security has resulted in a series of Navy/MSC programs referred to as "Sealift Enhancement." The overall concept is to make a substantial effort to increase the numbers of ships available to MSC and to improve the response time of those assets. This effort is closely coordinated with those of the Department of Transportation's Maritime Administration which is responsible for the development of the U.S. merchant marine.

It may well be that there will be no time in a future major conflict to build new merchant ships, as was done in World Wars I and II. Merchant marine augmentation of the military will be provided in a future emergency primarily by existing ships. That situation demands that the merchant marine be truly capable of augmenting Navy assets, and that ships not available in the active merchant fleet be available through some other means.

SUMMARY

This "long view" of maritime history, capsuled as it has been, should provide a basis for a clearer understanding of the role of sealift, of the roles of Military Sealift Command, the maritime administration, the U.S. merchant marine, and other elements of U.S. seapower.

Seapower is not an isolated element susceptible to good management. It cannot be made available when needed, to the degree needed, unless it exists at the time an emergency is identified. The military has a responsibility to promote development of a strong merchant marine. So do the Congress and the executive branch. Unfortunately, if the managerial axiom that everyone's business is no one's business is valid, the historical status of the merchant marine may best be described in the terms Charles Dudley Warner used in a comment concerning the weather. "Everybody is talking about it," he said, "but nobody is doing anything about it." That is an oversimplification, of course. As man improves his knowledge and understanding of that broad range of factors that influence weather, he gains some ability to do something about it.

The intent of this course is to equip Naval Reservists to better understand the functions, programs, and problems associated with sealift as an element of seapower, so that they too are in a better position to help assure that seapower is a reality—not illusory—and that it is available if and when needed and is adequate to the challenge.

CHAPTER 2

THE SOURCE OF STRATEGIC MOBILITY CHALLENGES FOR SEALIFT—UNITED STATES FOREIGN POLICY AND INTERNATIONAL COMMITMENTS

"Our non-NATO needs center not so much on additional combat forces as on our ability to move suitably trained and equipped forces over great distances quickly enough so that they can be of real use at the point of crisis. In some cases, their arrival might turn the tide of battle; in other cases—we would hope in most cases—they would deter the outbreak of fighting in the first place." (Secretary of Defense Harold Brown in his Fiscal Year 1981 report to the Congress.)

"I would recommend focusing more on short-run reduction measures, for example spending more for operations and maintenance for spares and war reserves, for munitions, for exercises and training, for military construction (especially in the Indian Ocean), and for enhancing our lift capability." Those words were used by the Joint Chiefs of Staff Chairman General David Jones in responding to a question from a U.S. Senator as to where additional funds would be used if they were made available to the Department of Defense to improve readiness of the Armed Forces.

Quotations from experienced and knowledgeable people, both within and outside the military services, which attest to the importance of mobility are never in short supply; neither are examples. Just as the horse cavalry outflanked rigid skirmish lines, troops rushed from Paris to the World War I front by taxi and prevented a German breakthrough. Hannibal's elephants moved supplies over the mountains to the Carthaginian general's armies in his war against Rome. Several civilizations later mules were used in Italy during World War II to pack supplies up mountain trails too narrow and steep for vehicles.

Two million American fighting men were deployed by ships to Europe to help win World War I. Less than three decades later there was an even greater demonstration of how a nation's military and industrial power can be projected over thousands of miles of ocean to help win another major conflict. In World War II, millions of tons of supplies and equipment were transported across the Pacific and Atlantic Oceans in ships as were more than 7 million American troops (figure 2-1).

With the advent of jet cargo aircraft able to deploy troops to any part of the world in hours, and pioneering probes of space itself, has the importance of ships as a means of transporting supplies and equipment, or even people, been significantly diminished? The answer is no. Military authority has pointed out in Congressional testimony, in speeches and in publications, that ships will continue to move about 96 percent of the volume of supplies, equipment, and materials necessary to support troops deployed overseas (figure 2-2). It also is possible, in a major and initial commitment of troops, that many may need to be lifted in ships.

Even in a short-term emergency, something less than a contingency operation, airlift would be able to move at best only about 15 percent of the logistical volume needed to support deployed troops. But, it is important to note that airlift and sealift are not competing modes of transportation. Each complements the other. Together they make up what has been termed the nation's mobility operating forces. Included are purely military organizations, such as the Air Force's Military Airlift Command and the Navy's Military Sealift Command, and the assets, systems, and people that are a part of the civil air and maritime industries of the United States.

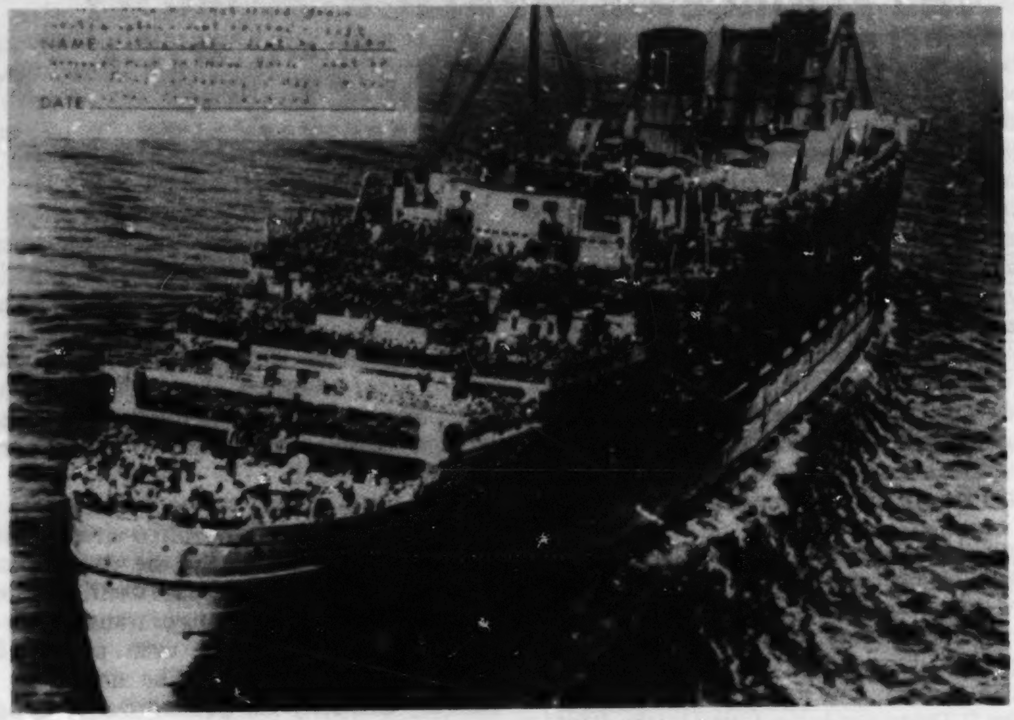

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Figure 2-1.—Troops being mobilized to Europe in WWII.

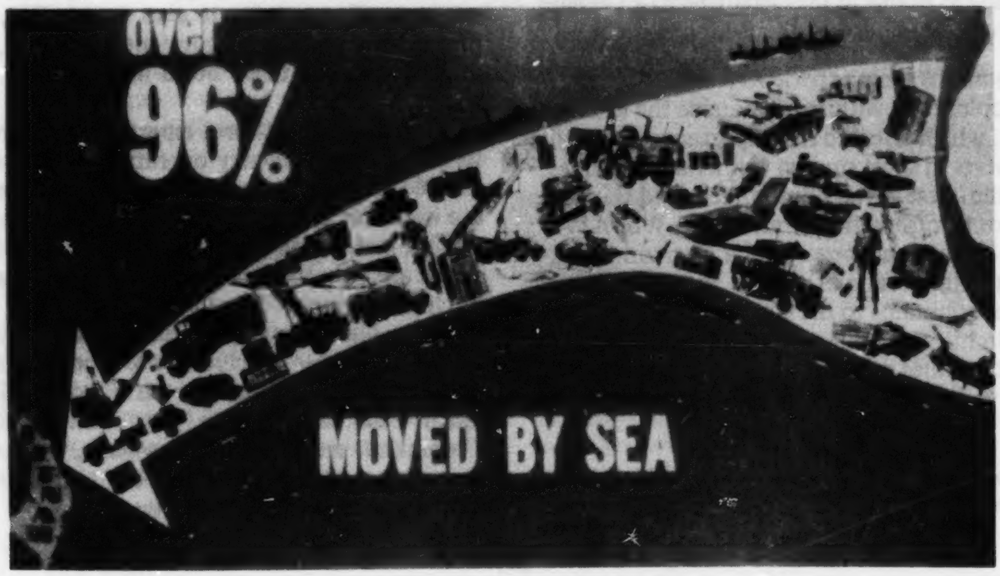
over
96%
MOVED BY SEA

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Figure 2-2.—Volume of material moved by sea.

NATIONAL OBJECTIVES AND INTERNATIONAL POLICIES

Any study of strategic mobility and the challenges it poses for the varied elements of U.S. seapower, including sealift, must consider national objectives, international commitments and policies, the world situation, and the manner in which lift or mobility requirements are generated by U.S. objectives and policies.

Although national objectives of the United States may be stated in a number of ways and in varying terminology, they are all basic in nature. Just as each individual seeks to promote his own survival, safety, economic well-being, self esteem, and friendly relationships with other people, thus enabling him to satisfy most of his personal needs, a nation's "behavior" is aimed at fulfilling national goals.

The United States acquired additional and broader goals during its development as a world power. First and foremost is that the United States provided an example to all who seek freedom, equality, and opportunity. In addition, the United States has become a protector of weaker nations which share a commitment to freedom.

Prior to World War I and in the early years following the end of that war, the United States was more an isolationist than a leader among nations. In the world community, at least up to World War II, a major means of maintaining world peace was through balances of power—nations or blocs of nations that could cancel out threats posed by territorial aspirations of possible adversaries.

The United States had a position of leadership and all its attendant responsibilities thrust upon it during World War II. This happened if for no other reason than it was the most productive, the strongest, and the best example of what life is like in a totally free world. To better meet its responsibilities, and in keeping with the American belief that nations should be partners in efforts to maintain peace, the United States entered into a number of collective security agreements. It now has mutual defense agreements with approximately 40 of the world's nations.

Included are the North Atlantic Treaty Organization (NATO), the Southeast Asia Treaty Organization (SEATO), the Australian, New Zealand, United States pact (ANZUS), and other regional agreements (figure 2-3). In each

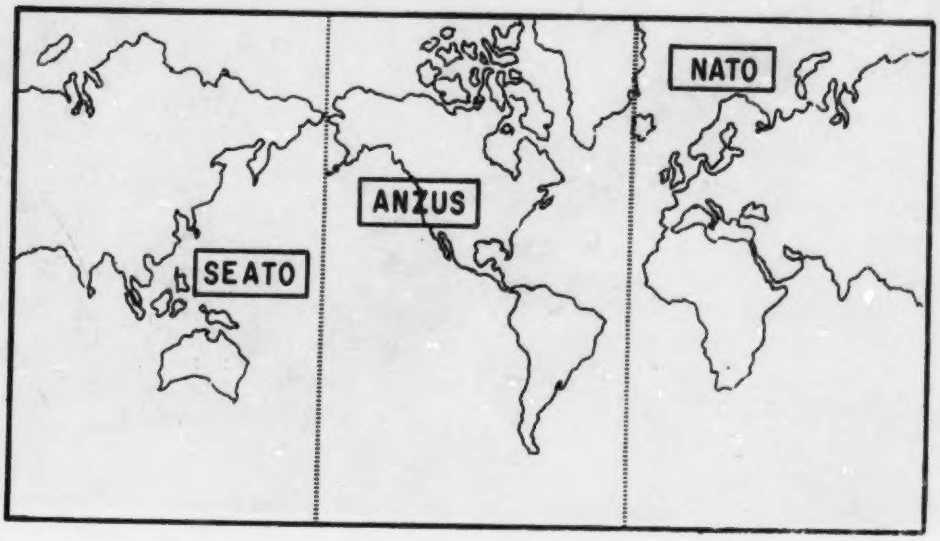

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Figure 2-3.—Nations having mutual defense agreements with the United States.

case, member nations pledge to assist one another in the achievement of common goals, basic of which is preservation of their security. The United States also has become an active member of the United Nations even though it failed to join its predecessor, the post-World-War-I League of Nations.

Most world nations are U.N. members. Despite their obvious differences as representatives of the Free World, Soviet bloc and Third World or undeveloped nations, all have made some commitment to the concept of collective security. The United Nations is, in fact, a mutual security organization. It provides, at the very least, a forum, an opportunity for differences to be settled by peaceful means.

The United Nations can and has committed military forces to attain security objectives supported by a majority of its members. Perhaps the best known example of a U.N. troop commitment was in South Korea in the early 1950s following an invasion of that country by neighboring North Korea. Other U.N. military forces, made up of troops supplied by member nations, have been committed to peacekeeping tasks in the Middle East, in Lebanon, and in the Congo. In each case, airlift and sealift forces of the United States assisted in the deployment and support of U.N. troops.

In the post-World War II period, despite a number of limited crises and relatively major crises in Korea, Hungary and Southeast Asia, a general peace was maintained in the world. In the early 1980s political and economic instability tended to increase in several areas. Some foresaw a possibility that a major war might again erupt between major world powers, notably the United States and the Soviet Union—probably ignited by a unstable situation in the Middle East.

Is there a real possibility of another World War? If so, what are the forces or the situations that might trigger such an event? These questions concern military leadership as well as elected officials of the U.S. Government. Should there be another world war, what form will it take? Might it be initiated by a nuclear attack? Would nuclear weapons be used by a nation threatened with defeat by conventional forces? Or is the

241.584

Figure 2-4.—Soviet Backfire bomber.

threat to civilization from nuclear warfare so great as to limit future adversaries to the use of conventional forces? These are questions to be faced.

The potential for destructiveness in another world war is dramatically increased by development of nuclear weaponry. Whether deployed by bomber (figure 2-4), by intercontinental missile, or by submarine; whether guided to their targets by satellite or carried into a major port in the hold of a ship; nuclear weapons can literally destroy a target nation. Both the USSR and the United States possess nuclear weapons along with the means to deliver them on target. Other nations continue to develop nuclear capability; some of them highly nationalistic small nations whose overall stability may be suspect.

Both the USSR and the United States have strong conventional forces, armies, navies and air forces. While the United States has long possessed the capability of projecting its economic and military power to almost any part of the world, the USSR historically has been a major land power. It was able to project its forces only in areas contiguous to its own territory. That situation has since changed. Soviet military power and mobility have continued to expand (figure 2-5). At the same time, as in previous periods between major wars, the United States allowed its power projection capability to lag.

However, events during the first part of the 1980s combined to increase public and official awareness that no matter how powerful a nation's armed services may be, they are of little avail if they cannot be delivered where needed and when needed. Examples of international turbulence were cited by the Secretary of Defense in his FY 1981 posture statement. These examples brought a clearer perception of the need for military readiness and military mobility.

Largely for economic reasons, he said, the United States has become heavily involved outside its traditional areas of concern in Europe,

30.157

Figure 2-5.—Soviet Military expansion.

Latin America, and the Far East. The Middle East, he warned, is a breeding ground for internal upheaval, as has already occurred in Iran. The results are predictable; war, terrorism, subversion, disruption, or a permanent decline in the supply of oil from the Persian Gulf. He also noted the Soviet invasion of Afghanistan, the foothold the Soviet had gained in South Yemen and the Horn of Africa, and the Soviet naval presence in the Indian Ocean. These factors, he warned, make a volatile situation more explosive.

Internal strife was then prevalent in parts of the African continent. A Cuban expeditionary force of more than 36,000 men, supported by Soviet and East European advisers, was actively involved in two principal areas in the early 1980s. Cuba had shown its willingness to exploit forces of change that existed in the Caribbean area. In Southeast Asia, there was continuing threat that hostilities between Communist states could spill over into Thailand.

As a result of these developments, the Secretary of Defense told Congress, "Our Defense establishment could be faced with an almost unprecedented number of demands. And some of those demands could arise more or less simultaneously."

It is the unstable world situation and the possibility that the United States might need to project its military power into one or more of those areas, that focused greater attention on sealift and its role in strategic mobility of U.S. Forces. It is possible of course, that a dynamic world situation can become more stable; that reason, logic, and goodwill will prevail. Stability might well be achieved within the decade of the 1980s. But, tying national security to such a slender thread of hope would be foolhardy, illogical, and naive.

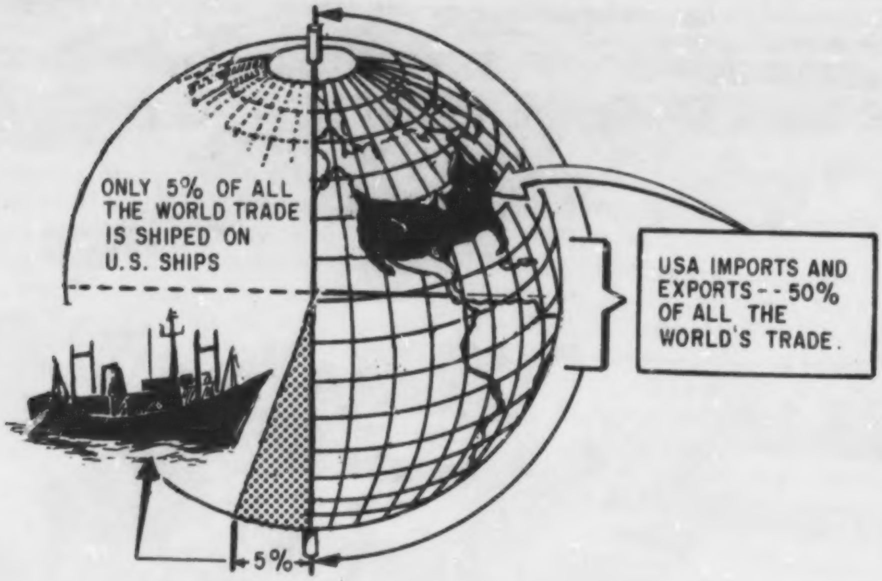
STRATEGIC MOBILITY FORCES

The first question in any discussion of U.S. defense needs and programs is: What role does military power play in maintaining U.S. security? Clearly, the independence and territorial integrity of the United States are necessary to security; but, because of changes in warfare technology, much of the United States could be devastated by nuclear weapons delivered by intercontinental missile without prior violation of U.S. independence or territorial integrity. Neither buffer states nor vast oceans offer the protection they once did. There may well be no time for civil defense preparations or force development. Existing defense forces and programs are necessary both to deter a nuclear attack, and to launch retaliatory measures.

The dependence of the United States on imports and exports to support the growth and stability of the nation's economy is great, perhaps more so than in any other period of history (figure 2-6). In 1979, U.S. imports totaled $229 billion. Exports were $225 billion, about 10 percent of the gross national product. Direct foreign investments amounted to another $168 billion. Any major interruption of the flow of goods and services to and from the United States, particularly foreign oil, can be as damaging as the loss of an important military campaign; even a war. For many U.S. allies, loss of oil imports could be fatal. Thus, it is evident that the economic security of the United States depends on world trade, freedom of the air and sea lanes, and unhindered use of space. Defense has a vital role in assuring that these conditions prevail.

In reviewing how military services help maintain U.S. security, it must be recognized that a need for traditional military forces did not disappear with development of the nuclear bomb in 1945. Conventional capabilities remain the most usable form of military power. In fact, they have been the only type used since 1945. U.S. security remains threatened by any large concentration of military resources in enemy hands. An obvious defense role is to be able to counter such threats with superior force.

While nuclear forces concentrate unprecedented amounts of destructive capability in small transportable units, conventional warfare requires substantial commitments of men, equipment, and materials. Because their effectiveness requires repeated delivery of large amounts of ordnance, their radius of operations tends to be limited. As a result, major wars between conventional military forces usually have been decided


ONLY 5% OF ALL THE WORLD TRADE IS SHIPED ON U.S. SHIPS
USA IMPORTS AND EXPORTS--50% OF ALL THE WORLD'S TRADE.
5%

30.158

Figure 2-6.—U.S. imports and exports.

only after extended and relatively slow-moving campaigns of attrition.

As the Secretary of Defense stressed in his Fiscal Year 1981 report to the Congress, "Personnel, equipment, and supplies must be transported over long distances; stockpiles of combat consumables must be established; multiple campaigns must usually be conducted; and victory achieved only after successive blows by land, sea and air." Those words vividly illustrate the importance of airlift and sealift; the primary means of delivering both troops and the materials they consume.

Department of Defense strategic mobility forces fulfill three primary tasks. They move people, supplies, and equipment to wartime locations; provide sustaining support; and allow U.S. forces to respond to unpredictable shifts in the demands of combat. The three elements of Defense mobility forces are airlift, sealift, and the prepositioning of supplies and equipment (figure 2-7).

Military Sealift Command is responsible for sealift. It maintains liaison with the U.S. maritime industry that augments military sealift capability in both peacetime and wartime. The comparable organization for airlift is the Military Airlift Command. It too relies heavily on commercial resources for emergency augmentation.

Airlift augmentation is provided by private industry which operates 250 passenger aircraft and another 120-plus cargo carriers either through direct charter or through a formal airlift augmentation program known as the Civil Reserve Air Fleet. The sealift counterpart is the Sealift Readiness Program. It could make about 180 cargo ships available in an emergency short of mobilization through contractual commitments between MSC and the carriers. Four hundred merchant-type ships are committed by NATO allies for use in a NATO emergency. In a declared national emergency, most of the 525 ships in the U.S. Merchant Marine are subject to requisition by the U.S. Government.

The planning and coordination involved in the management of military mobility forces and industry-provided assets are complex functions.

Bases and footholds of all kinds become strategically important in these circumstances. It

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Figure 2-7.—A prepositioning of supplies and equipment.

is one thing to plan a defense of Western Europe with U.S. ground forces and fighter aircraft stationed in Germany, with the control of such narrow waters as the Bosphorus and the Strait of Gibraltar in allied hands, with a fleet deployed in the Mediterranean, and with staging and operating bases in the Azores, Greenland, Iceland and the United Kingdom. It is quite another matter to contemplate a forward defense without these strategic assets—with the entire U.S. military effort on a distant front having to be supported from the United States. There is a question as to whether airlift and sealift forces are equal to a task. It staggers the imagination. A crash program to build up needed forces would have an equally staggering impact on the U.S. Treasury, and the taxpayer. Thus, a defense role is to maintain strategic strike forces and the supporting systems and facilities they require to assure their mobility. In one word, the key is "Readiness."

U.S. ROLE AS A WORLD POWER

As previously noted, the United States is both a world power and world leader. To some extent a leadership role was forced on the United States as the strength and influence of its Allies waned. Former enemies, now Allies, Japan and Germany have limited their involvements in military forces. They tend to rely on the United States to a significant degree. However, the leadership role of the United States in many regions of the world is primarily a result of its own interests and its involvement—politically, economically, diplomatically, and, psychologically. In a world where competing ideologies and conflicting national goals are the norm, military power plays both a peacekeeping and national security role. The sealift missions for which MSC is responsible assure that military power can be readily projected.

It is impossible to predict where, when, or how military power may be exerted. But its very existence is important. Strength deters rash actions by nations interested in acquiring the territory of another, or of controlling its government. Military strength of the United States—measured in size, composition, readiness, deployment, sustainability, and modernization—must be sensitive to changes in those conditions.

There are key areas of U.S. interest which can be identified in geographic terms—areas where sealift could be tasked to support military operations.

Both the Soviet Union and the United States long have had an adversary relationship because they consistently seek to advance their influence in other areas of the world. Cooperation rises and falls as national interests coincide or clash.

Many Americans tend to see the Soviet Union as an omnipotent power whose every action poses a threat to U.S. security. In truth, the Soviet Union has severe domestic problems that appear to be enlarging. The Soviet economy, for example, grew at the rate of 6 percent in the 1950s, dropped to 5 percent in the sixties and dropped again to 3.5 percent in the midseventies.

In the same period, Soviet energy production, particularly oil, slowed. It is expected to slow even more substantially in the 1980s. Extreme fluctuations in grain production also have caused problems. Soviet corn imports needed to sustain that nation's livestock and poultry production have increased. At the same time, the Soviet Union has been pressed by Soviet bloc nations to increase supplies of oil, food, and other resources made available to them.

Soviet commitments to the development of its armed forces have increased, almost doubling in the period from 1970 to 1980. In the 15-year period ending in 1980, the Soviets increased their military manpower by about one million, more than quintupled the number of their strategic nuclear delivery vehicles, deployed more intercontinental missiles, and improved their accuracy by a factor of five. They also embarked on a program to modernize their medium-range attack force of more than 100 mobile missile launchers and 50 bombers, and added about 25 new divisions to their ground forces. Some 1,000 first-line combat aircraft also were added to their military forces. The Soviet Navy was significantly strengthened. Expanded airlift and sealift forces, along with a modern navy and a large and modern merchant marine have allowed the Soviet Union to actively involve itself in areas far beyond its own borders.

Many view the steady growth of Soviet military strength with great alarm. However, the USSR has acute and apparently increasing problems in meeting domestic demands for energy and food. This may have had greater influence on the expansionist, trouble-making actions by the Soviet Union in the 1980s. The United States must be alert and able to protect its own interests in whatever areas of the world the Soviet Union may seek to exploit forces of change that abound in the 20th century. At the same time, U.S. diplomats must continue to explore, with the Soviet Union, areas where cooperation can be increased. This is particularly important in setting realistic limitations on the manufacture, maintenance, and possible use of nuclear and other types of weaponry.

While the Soviet Union is a most likely adversary, the United States has direct concerns in several regions of the world. These regions are located in areas where there is always a possibility that U.S. military power may be deployed as pledged by U.S. collective security agreements. They include the following:

1. Western Europe, a region of which there can be no doubt about its vital interest to the United States. It has the greatest concentration of economic power in the world, a population of 260 million, and a gross national product totaling a mind-boggling $2 trillion. Its history, its culture, and its adherence to democratic forms of government—plus the fact that many Americans had their origins there—have welded strong ties between countries of the region and the United States. The United States is prepared, if necessary, to again defend its European allies.

There are dangers to nonSoviet Europe. For example, continuing disputes between Greece and Turkey have weakened NATO's southern flank.

Economic distress in Portugal and Turkey affects their contributions to the common defense. With the death of Marshal Tito, it is possible that disorders could break in Yugoslavia or Poland which would create an excuse for Soviet interference. Even more important to stability in the Western European region is heavy dependence of its countries on OPEC oil. Its supply could be disrupted. Another highly visible threat is that posed by the massive Soviet presence in Eastern Europe. Should there be a war in this region, it is likely that it would be a conventional type of conflict rather than a nuclear confrontation. But there can be no assurances that such will be the case.

The main thrust of U.S. efforts to help maintain West European stability continues to be through NATO. That collective security organization provides a means for both military and diplomatic leaders of the varied countries to work together for common security. A long-term program has been launched to strengthen NATO. Efforts to increase U.S. ability to rapidly reinforce NATO strength also have been initiated. Establishment of a rapid reinforcement program is aimed at doubling the U.S. ground forces and tripling the tactical air forces in less than 2 weeks after a decision is made to reinforce NATO. This obviously poses challenges to the mobility operating forces, Military Airlift Command, and Military Sealift Command, as well as to private sector air and maritime industries which the military services rely on for lift augmentation.

2. Asia, where the United States interests are probably as vital as those in Western Europe. Because of the Aleutians, Hawaii, and Guam, the United States is bound to have a strong Pacific orientation. Much of the U.S. interest in Asia is the result of economic factors. U.S. trade with Asian nations reached $78 billion in 1978, higher than comparable figures for Western Europe. The United States is a party to the ANZUS pact along with Australia and New Zealand. It has made strong military commitments to the security of the Republic of Korea, and has opened a relationship with the People's Republic of China. The United States also has close defense and trade relationships with Japan.

In the early 1980s, as the situation in the Middle East became a matter of concern, the United States increased its presence in the Indian Ocean. It done so primarily by expanding Navy fleet activities there. Nearly 50,000 U.S. troops are stationed in Japan. Others are based in Korea and in other locations in the region. Military Sealift Command (MSC) has a particular interest in the region since the command provides ships and crews for the Near Term Prepositioned Force deployed in the Indian Ocean. Thirteen MSC-controlled ships are stationed there, carrying equipment and supplies that can be landed to support up to 15,000 air-deployed troops and air strike units of the Rapid Deployment Force. Any outbreak of hostilities or threat of hostilities in the Asian region would create immediate high-volume requirements for the airlift and sealift operating agencies, MAC and MSC.

3. The Middle East, where tension has heightened in recent years. The United States is committed to the security of Israel and Egypt as well as to the resolution of the Arab-Israeli dispute. Middle East oil is of great importance to the United States which depends on it to fuel its technology, although not to the degree that U.S. allies do. The United States imports about half the oil it uses. About half of those imports are from the Middle East. While NATO stores sufficient oil to support initial activation of allied forces in Europe, threats to halt or reduce the flow of oil by members of OPEC could severely strain the political cohesion of U.S.-Western Europe alliances.

The reduction of Soviet oil production, as previously noted, almost certainly will influence policies of that country in the Middle East. These policies without doubt would be inimical to the interests of the United States and its allies. Thus, the possibility for further turmoil in the Middle East is great.

Soviet exploitation of the Middle East situation also poses dangers for those nations since the hostility there toward Moscow is great. Iran and the theocracy in power in the early 1980s managed to be simultaneously anti-American and anti-Soviet. Iraq, despite receiving military aid from the USSR, also views the Communist leaders with suspicion.

Israeli-Arab differences are not likely to be fully resolved during the 1980s. Most Arab states have continued to oppose the treaty between Israel and Egypt signed in 1979 under the auspices of former President Jimmy Carter. Iran and Iraq have engaged in a shooting war of their own, and the Palestinian question has been a focal point for controversy for many years. Soviet intervention in Afghanistan added fuel to the political fires that generate so much heat in the Middle East. Ethnic, political and internal political strife will continue to be the rule in the Middle East for some time. Where those elements coexist, there is always a possiblity that war can result. A regional conflict could well spark a larger controversy between major powers.

4. Africa, a continent where the stake of the United States continues to grow is another area of major concern. Algeria, Libya, and Nigeria supply about 40 percent of the U.S. oil imports, including two-thirds of the sweet crude oil used to produce gasoline and most military petroleum products. The continent has become a major source of minerals for the U.S. economy. Its people have developed an appetite for U.S. goods, services, and capital. As developing nations emerge, politically and economically, fervent factionalism, guerilla warfare, and terrorism are often seen. Race relations between descendants of colonialists and natives are a continuing source of concern. These and other factors fuel controversy that is a target of Soviet exploitation. Soviet, East European, and Cuban military personnel and technicians are active in more than 20 African countries. But, there also is a growing desire among African nations to cement ties with the West, including some where Soviet forces have been most active. Africa is an area where Soviet Bloc and Free World interests will be in conflict for an extended period of time.

5. The Western Hemisphere, where the Untied States may too long have taken for granted that dangers to our security could not arise, especially on its borders. Because of its fortunate geographic location, the United States historically has been relatively immune to transoceanic invasion. Canada on the North has been both a good friend and the greatest single trading partner of the United States. To the South, shared interests and problems between the United States and Mexico have required cooperative efforts to resolve them.

In recent years, important new oil discoveries have given Mexico additional leverage in its relationships with both the United States and other nations. Mexico is now the United States leading trading partner in Latin America, fifth largest overall. Successful negotiation of agreements for the return of the Panama Canal to that country have improved U.S. relations there and throughout the region. This has demonstrated the United States determination to align itself with the forces of moderation and peaceful change in Central and South America. The United States continues to support land distribution and related agricultural products throughout the region. It is both helping finance and providing technical assistance to increase food and energy production.

A primary concern for the United States is the relationship between Cuba, which lies less than 100 miles off the Florida coast, and the Soviet Union. Through Cuba, the Soviets have been able to add fuel to the flames of terrorism and revolution that exist in some parts of the hemisphere. To counteract these, as well as to promote its own interests, the United States provides economic, technical, and military aid to those nations nearest its own borders. Tensions no doubt will rise on occasion, but it is doubtful that the United States and its neighbors will allow a deterioration of their relationships to the point where Armed Forces might be employed.

These are but some of the many factors the Department of Defense considers in shaping its forces and structuring its programs. The overall task would be manageable if a single "requirement" could be deduced from each international environment. However, reality is not that simple. The objectives and policies of all U.S. allies must be considered as well as those of our own nation. Many and widely differing defense postures could be established. In the end, however, the United States must simultaneously be in the business of deterring strategic nuclear, theater nuclear, and a nonnuclear war. It should be capable of sustaining as many as two contingencies at the same time.

SEALIFT NEEDS FOR STRATEGIC MOBILITY

Total defense needs will be larger in the future than in the past. Contributions by allies also must be greater. The basis for U.S. planning must be that the burden imposed by collective security commitments will not be borne entirely by the United States. The United States will contribute to the efforts of allied nations to defend themselves. Those nations are likely to be the immediate subjects of most of the crises that could arise in the future.

While force and program development result from contingency planning, other factors must be considered. They include the number of contingencies the United States can expect to deal with simultaneously, the degree of readiness that must be maintained, and the extent of contributions expected from U.S. allies. Other considerations include how long the United States must be prepared to fight, where a contingency operation may take place, and the probability of its success.

Since the 1980s has been a period of instability, U.S. design and assessment of military capabilities have changed. Among changes reported by the Defense Department were:

1. Using more demanding contingencies in planning force and program development, and being prepared to cope with a greater number of contingencies.
2. Increasing the probability that the military services can mobilize and respond speedily to an attack, sustain its response, and achieve its objectives.

At the Joint Chiefs of Staff-Department of Defense level, the questions which must be answered concern how large an Army, Navy, Marine Corps, and Air Force are required; what kinds and what numbers of ships, aircraft, tanks, and other equipment; and where and when troops will be based or deployed. Ultimately, answers to these and hundreds of related questions are reflected in detailed and carefully supported budgets submitted to the Congress of the United States for review and funding.

Determinations of sealift requirements to be assigned to MSC for fulfillment are based on the missions and responsibilities assigned to the combatant forces. Overall, however, the development of a sealift capability, peacetime operation and exercise of sealift resources, and the establishment of special sealift-focused programs also are constrained by budgetary limitations. In short, the guiding rule is cost effectiveness—how much can be done with an X amount of defense dollars that must be equitably allocated to a vast array of functions and programs.

Each year, MSC receives estimates of next-year sealift requirements from the "shipper services," the Army, Navy, Marine Corps, and Air Force. Projected sealift requirements allow MSC to establish its operating budget, and help determine how large a sealift force, Naval Fleet Auxiliary Force, and scientific support ship force the command should have. In determining how large a fleet is required, and its composition, MSC and Navy officials consider the requirements set forth in general war plans, in contingency plans, and in operational plans. These are developed by the Joint Chiefs of Staff, Unified Commands, the military services, Department of Defense agencies, and the Joint Deployment Agency.

MSC plays a major role in strategic mobility planning—a role covered in more detail in the final chapter. Its jointly staffed planning function is responsible for the sealift portion of worldwide military deployment requirements. In that capacity, MSC planners review operation, contingency, concept, mobilization, and emergency plans for sealift feasibility. From such reviews, comes data used to establish MSC requirements for people, for ships and shipping services, and for recruiting, training, retention, and evaluation of its work force.

Types and numbers of MSC-sponsored Naval Reserve units and the Naval Control of Shipping Organization, which the MSC commander monitors for the CNO, are based on requirements set forth in general war, contingency and operational plans. Also included is the training personnel receive and the exercises in which they participate.

Funding is provided the command for sealift readiness and for payment of costs incurred by keeping some of its dry cargo ships in reduced operating status. This funding is provided even though not immediately needed for fulfillment of peacetime lift requirements. It is determined on the basis of wartime or emergency planning. Readiness funding is made available by the CNO from appropriated Navy dollars rather than from the Navy Industrial Fund normally used to pay the cost of MSC shipping services. Details are covered in the chapter on MSC financial management.

The Navy 5-year shipbuilding plan includes ships to be constructed for MSC operation. Recommendations for Fiscal Year 1981 included $179.9 million for construction of five ocean surveillance ships. Another $207 million was sought for construction of two maritime prepositioning ships. These are vessels that would be loaded with equipment and supplies to support deployed forces and prepositioned in areas where such deployment might be required. Another $45.3 million was included in the Navy 1981 budget for acquisition of a fleet ballistic missile resupply ship to be operated by MSC.

Over a period of 5 years, ending with the 1985 fiscal year, Navy force plans called for construction of 4 new oilers, 9 ocean surveillance ships, and 14 maritime prepositioning ships—most if not all for MSC manning and operation. Altogether, the Navy recommended construction of 97 ships between FY '80 and FY '85.

A growing awareness was depicted by the Congress, Joint Chiefs of Staff, the Department of Defense, and the Department of the Navy of the need to modernize and expand sealift capability. This was to assure military support of U.S. foreign policy and national objectives be provided in 1980 by establishment of the Rapid Deployment Force—troops earmarked for quick deployment.

The prepositioned ships (figure 2-8) sought by the Navy would support the RDF, being loaded with equipment and supplies to sustain operations until an air and sea logistical lifeline can be established. Congress approved supplemental defense funding for the Government's acquisition of eight SL-7s which are capable of sustaining 33-knot speeds. Six were procured in 1981 with the other two expected to be purchased the following year. Their tremendous fuel consumption made the SL-7s too costly for operation by private carriers in peacetime.

The huge container ships are being reconfigured as roll-on/roll-off ships which are better able to fulfill military sealift requirements. They also will be able to carry some containers. The

30.160

Figure 2-8.—MSC prepositioned ships.

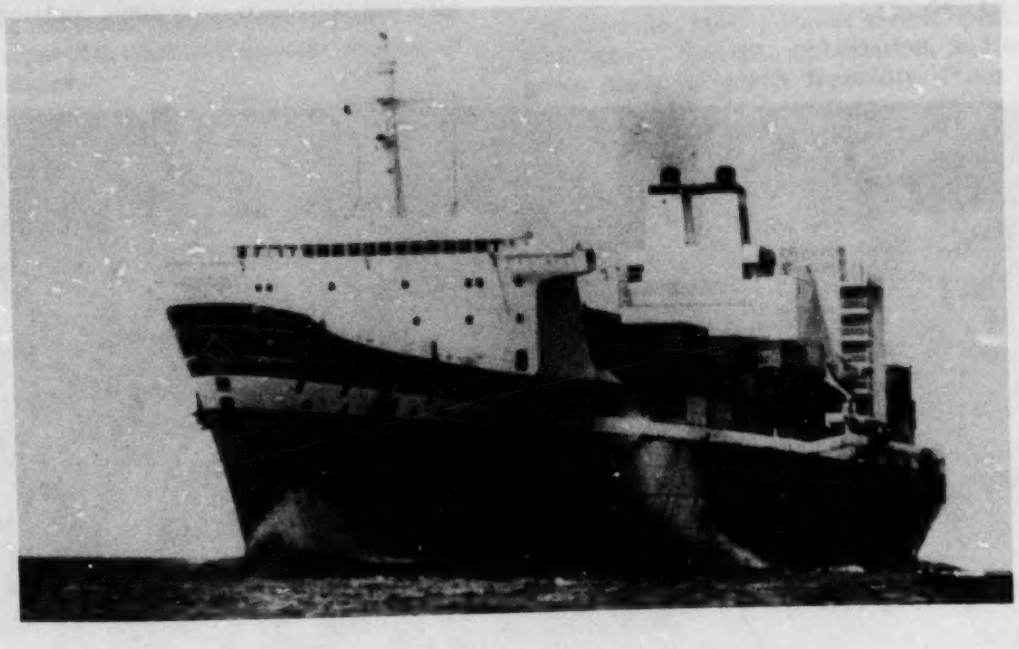
SL-7s (figure 2-9) will not be used in peacetime for the carriage of military cargo. Instead, they are anchored at strategic points and manned with small caretaker crews. In an emergency, they can be put into operation within a few days and can deliver a significant volume of military cargo in a very short period.

While negotiations were being carried out for acquisition of the SL-7s and while Congress considered recommendations for construction of Maritime Prepositioning Ships, the Department of Defense established an eight-ship Near Term Prepositioning Force. It was stationed in the Indian Ocean with supplies and equipment needed to sustain initial operations of 15,000 RDF troops and a number of air strike wings. That force was deployed in the Indian Ocean in mid-1980. By late 1981, the NTPF Force in the Indian Ocean included 13 ships.

SUMMARY

The ultimate mission of sealift, like that of other mobility forces, is supportive of national objectives and international policies of the United States. Only through maintenance of adequate mobility forces, can the United States project its military power overseas when such an option is considered necessary by the nation's top officials. Without strategic mobility forces to move equipment and supplies, the range of options available to the nation's decision makers is limited. These forces are essential to sustain operations of fighting forces and to assure that these forces can immediately respond to shifts in combat situations. The impact of such a limitation on national security could threaten the security, even the survival, of the United States.

It is unlikely, at least in the foreseeable future, that the United States will—or even can—withdraw from the collective security pacts it has entered into with other world nations. United States dependence on World trade—both for imports of critical resources needed for industry and defense and for sale of American goods and services in foreign markets—is not apt to be changed. In a real sense, the United States has become an island nation. It depends on its



30.161

Figure 2-9.—An SL-7 at sea carrying military cargo.

economic, political, and military interrelationship with those nations who share U.S. interests for its continued growth and security.

It is these national security and foreign policy considerations that result in the assignment of military sealift missions to the Navy, and ultimately to the Navy's sealift operating agency—the Military Sealift Command (MSC). MSC determination of its optimum force structure, establishment of its operating procedures, long-term programs, fulfillment of peacetime sealift, and nontransportation requirements all are derived from, and directed toward, the fulfillment of specific national security objectives.

CHAPTER 3

MILITARY SEALIFT COMMAND MISSIONS, ORGANIZATION AND RELATIONSHIPS

As an element of the U.S. Navy, Military Sealift Command is a unique organization. It is commanded by a Navy vice admiral who reports directly to the Chief of Naval Operations (figure 3-1). The command is a fleet, comparable in status to the Atlantic Fleet and Pacific Fleet. However, MSC operates worldwide, providing services for all elements of the Department of Defense. Manned primarily by civilians, the command operates leased and Government-owned ships and procures ships and shipping services from private industry. Its operations are funded primarily through the Navy Industrial Fund (NIF) rather than by the allocation of tax dollars as part of the normal budgeting process. However, MSC does receive Navy-appropriated funds as well.

It sometimes is difficult for a military student to visualize what MSC is, what it does, and how it fulfills the varied military requirements assigned to it. A common tendency is to seek to understand MSC by relating it to other Navy commands. That comparison is difficult to make and often leads to a faulty perception of MSC. Military Sealift Command has five basic missions. They are:

1. To provide sealift support for U.S. Forces deployed in the implementation of national policy in accordance with military emergency, contingency, or general war plans.

2. To plan for emergency employment of sealift forces and systems, and to develop sealift capability in peacetime for the support of Department of Defense emergency, contingency, and wartime requirements; including manning, maintaining, and operating ships pre-positioned or designated for support of the Rapid Deployment Force.

3. To provide logistical sealift services in peacetime in support of all elements of the Department of Defense by worldwide delivery of military ocean cargo.

4. To man, maintain, and operate Navy Fleet Auxiliary Force ships assigned by the Navy to MSC for direct support of the Navy fleet.

5. To fulfill other non-transportation requirements of the Department of Defense such as the manning and operation of scientific support ships.

These missions are set forth in a Department of Defense instruction often referred to as the MSC charter. DOD Instruction 5160.10, Single Manager Assignment of Ocean Transportation, establishes command responsibilities and provides policy guidance concerning MSC relationships with the customers it serves and with Navy officials to whom the MSC Commander reports.

MANAGEMENT STRUCTURE FOR SEALIFT OPERATIONS

Established in August 1949 and having begun sealift operations in October 1949, MSC is the Navy operating agency for Department of Defense sealift. The MSC Commander is the Navy executive agent for sealift operations. The Commander is directly responsible to the Secretary of the Navy who is designated the single manager for Department of Defense ocean transportation.

However, the Secretary of the Navy has delegated considerable authority for management of sealift operations to the Assistant Secretary of

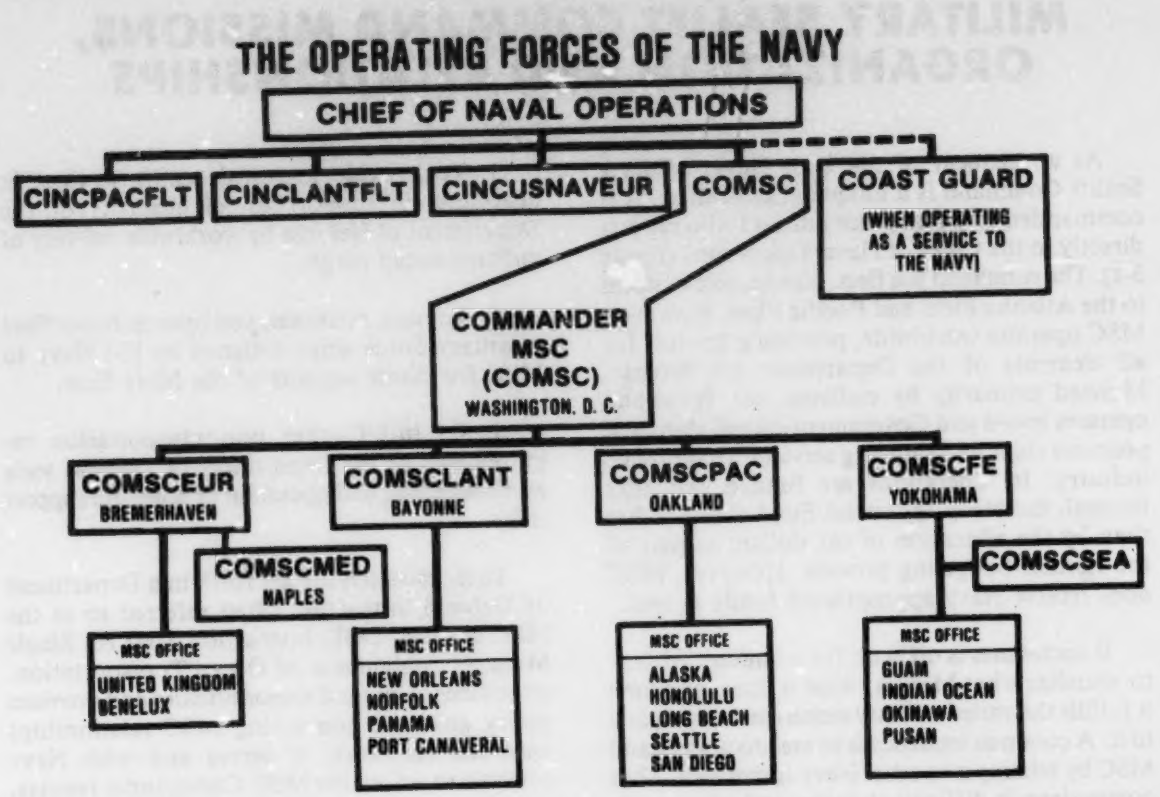

THE OPERATING FORCES OF THE NAVY
CHIEF OF NAVAL OPERATIONS
CINCPACFLT
CINCLANTFLT
CINCUSNAVEUR
COMSC
COAST GUARD
(WHEN OPERATING AS A SERVICE TO THE NAVY)
COMMANDER MSC (COMSC)
WASHINGTON, D. C.
COMSCEUR
BREMERHAVEN
COMSCLANT
BAYONNE
COMSCPAC
OAKLAND
COMSCFE
YOKOHAMA
COMSCMED
NAPLES
COMSCSEA
MSC OFFICE
UNITED KINGDOM
BENELUX
MSC OFFICE
NEW ORLEANS
NORFOLK
PANAMA
PORT CANAVERAL
MSC OFFICE
ALASKA
HONOLULU
LONG BEACH
SEATTLE
SAN DIEGO
MSC OFFICE
GUAM
INDIAN OCEAN
OKINAWA
PUSAN

Figure 3-1.—The operating forces of the Navy.

the Navy for Shipbuilding and Logistics (ASNS&L) and through that office to the Deputy Assistant Secretary for Sealift and Maritime Affairs (ASNSAMA). The latter office provides policy guidance in contractual and procurement matters pertaining to MSC operations. Other ASNS&L elements which influence MSC operations include the Deputy Assistant for Shipbuilding and Logistics, the Deputy Director for Shipbuilding, the Deputy Director for Acquisition and Contract Policy, and the Deputy Director for Aviation and Ordnance.

The organization now known as ASNS&L has undergone several reorganizations in recent years, actions symbolic of an increase in emphasis on sealift and troop mobility relationships. Previously, a Navy assistant secretary was responsible for manpower, reserve affairs, and logistics. Prior to that, the Secretary was responsible for installations and logistics. Generally, Navy redesignations and reorganizations have paralleled those made at the Department of Defense level.

Among actions taken in recent years to strengthen sealift mobility operating forces was the creation of a so-called board of directors to monitor MSC operations and procurement. Members include the MSC Commander, the Navy Assistant Secretary for Financial Management, the Deputy Chief of Naval Operations for Logistics, and the Deputy Assistant Secretary for Sealift and Maritime Affairs (ASNSAMA). In effect, the board provides the same type of policy guidance and orientation for MSC as a corporate board of directors would for a private sector organization. MSC's annual revenue of more than $1 billion and its Navy Industrial Fund's financial management make the command both "big business" and a Navy fleet organization.

Requirements levied on MSC are generated by military emergency, contingency and general war plans, and by peacetime needs for logistical supply of troops deployed in support of U.S. national objectives and foreign policies. Chapter 2 deals with this subject in considerable detail.

Cargo delivery requirements are generated and levied on MSC through the Army's Military Traffic Management Command by the military services; the Army, Navy, Marine Corps, and Air Force. Requirements also are generated by other agencies; among them the Defense Fuel Supply Center and Joint Deployment Agency, the unified commands, and the Joint Chiefs of Staff. In cases where there is disagreement or concern as to priorities for movement, or when priorities need to be revised, the Joint Chiefs of Staff provide direct guidance to MSC.

MSC ORGANIZATION AND OPERATIONS

Three primary functions are performed by the Military Sealift Command. One is the sealift or delivery of military cargo over the oceans. Types of cargo include both dry cargo and liquid products such as petroleum, oil, or lubricants (figure 3-2). The latter are commonly referred to as POL.

A second MSC function is the manning and operation of ships dedicated to direct support of the worldwide Navy fleet. These are ships assigned to the Naval Fleet Auxiliary Force which MSC operates. Included are oilers which replenish Navy fleet ships while under way, stores ships, ammunition supply ships, fleet ballistic missile resupply ships, cable-laying and repair ships, and ocean-going tugs capable of handling both towing and salvage operations.

The third primary MSC function is the manning, operating, and maintaining of scientific

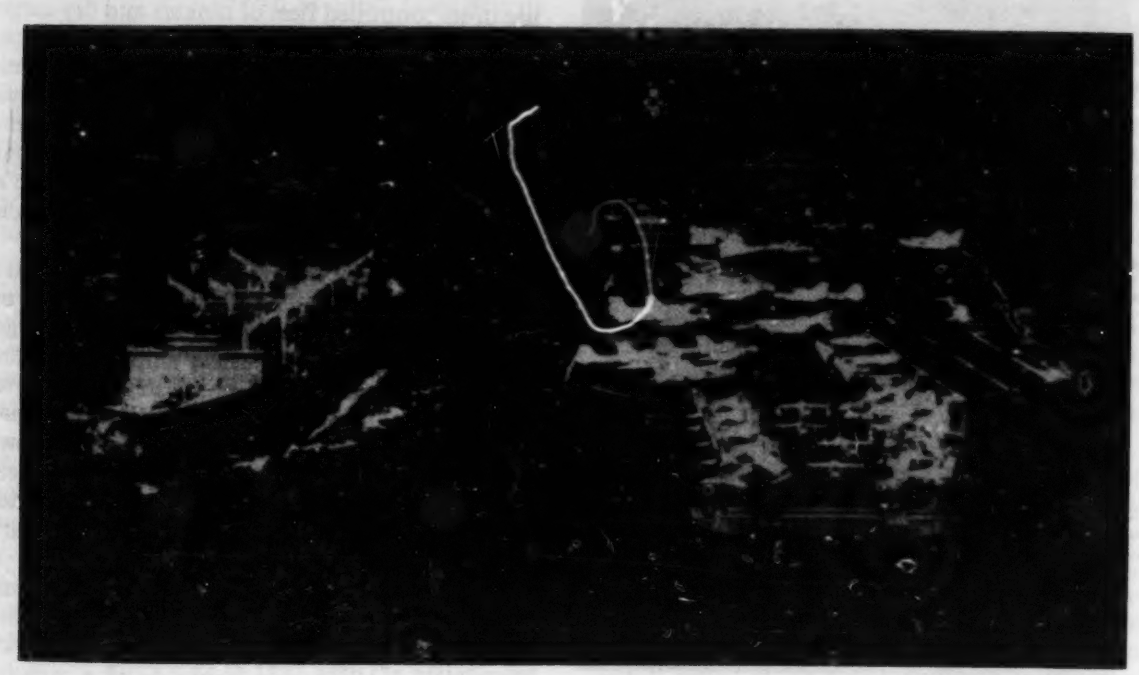


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Figure 3-2.—An MSC POL ship refueling the aircraft carrier USS Kitty Hawk.

support ships (figure 3-3). Included are specialized ships that carry technicians and scientists provided by sponsoring agencies who are involved in oceanographic research, in survey of the ocean bottoms, hydrographic research, and support of service missile test centers. In past years, MSC has manned instrumentation ships that supported NASA space flight programs such as the *Apollo*, *Gemini*, and flights of the space shuttle, and will do so in future years.

Typical MSC ship operations in the scientific support area have included the recovery of hydrogen bombs lost off the coast of Spain as the result of an aircraft accident, locating the wreckage of lost submarines such as the USS *Thresher*, and analysis of the ozone content of the Earth's atmosphere.

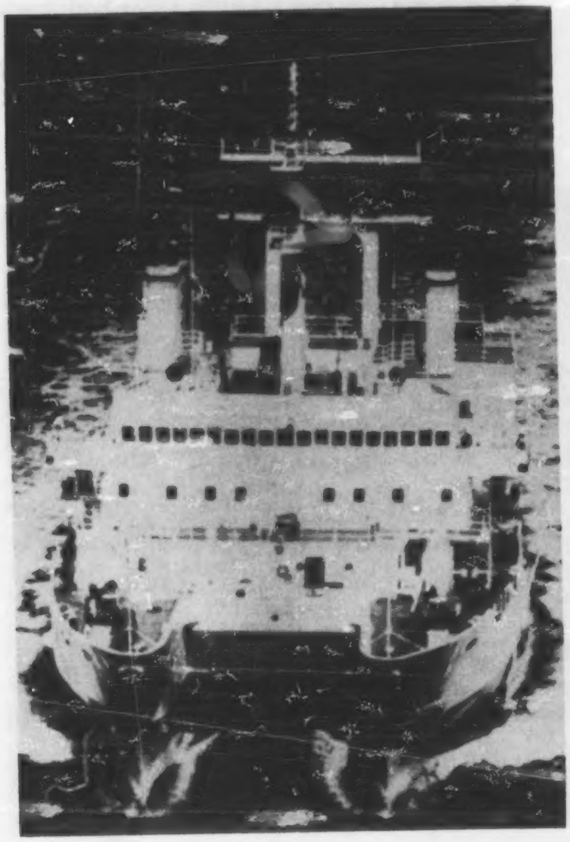

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Figure 3-3.—An MSC scientific support ship.

In performing its cargo delivery or sealift functions, MSC relies on ships available in its MSC Controlled Fleet, which include Government-owned and privately owned ships under charter to the command. MSC also relies on shipping services provided by scheduled commercial liners that deliver dry cargo point-to-point. MSC books cargo on scheduled liners, often called berth term ships, paying for space used just as do private shippers. However, there is a difference in that MSC negotiates special rates for many world routes with private carriers—rates that are listed in shipping and container agreements published twice each year by MSC for use by military shippers.

MSC also charters ships from private owners, primarily tankers and dry cargo carriers. These generally carry cargo in full-shipload lots or are used to fulfill military requirements in areas not normally served by lines providing scheduled service. Specialized ships, for example submersibles for underway operations or container ships for loading/offloading tests, also are chartered as needed to satisfy defense requirements.

In fulfilling military requirements through the use of its controlled fleet of tankers and dry cargo ships, MSC provides two types of delivery service. Some of the ships in the controlled fleet operate on schedule, just as do commercial ships operated by private carriers. Military customers, for example those in the Pacific Ocean area, know that MSC ships will call at ports in their areas on a regular schedule and thus can better manage their shipments.

Other MSC Controlled Fleet ships are operated as tramps. They follow no schedule or route, but are diverted to where military cargo needs to be picked up. These ships deliver the cargo to a special destination, or destinations, as required by the military customer. The combination of scheduled and unscheduled services allows MSC to manage its organic fleet assets effectively and economically. It simultaneously provides reliable and flexible service to the Military Establishment.

MSC also provides complete shipping systems to military customers, doing so by negotiating contracts with commercial carriers. Service dedicated to the particular needs of a military customer is often the most effective service obtainable.

Chapter 3—MILITARY SEALIFT COMMAND MISSIONS, ORGANIZATION AND RELATIONSHIPS

To provide worldwide service—a task that takes MSC Controlled Fleet ships from polar region to polar region—the command maintains a worldwide organization. Some elements of its organization have remained relatively constant; others have not. It is routine, for example, for MSC offices to be established, closed, or relocated wherever and whenever demands for delivery of military cargo warrant such organizational changes.

An example of MSC ability to restructure its organization to meet new and different demands is the Near Term Pre-positioned Force (NTPF). The NTPF is a group of dry cargo ships and tankers, assisted by two MSC-chartered harbor tugs, stationed in the Indian Ocean. Loaded with equipment and supplies, including fuel and water for initial support of a force of 15,000 Rapid Deployment Force troops that may be deployed by air—plus several Air Force wings—the NTPF was organized, manned, and put on station by MSC within a few months in early 1980 in response to JCS established requirements.

Some of the ships, particularly roll-on/roll-off ships, were chartered by MSC from private industry. Other ships were assigned from the MSC Controlled Fleet. Some of the ships were manned with civil service mariners. Other ships, already part of the MSC Controlled Fleet, continue to be manned by owner-provided crews. The NTPF is under the administrative control of an MSC-assigned naval officer who is "double hatted" to a fleet command so that he or she also can exercise operational control of the NTPF. The MSC-assigned commanding officer heads an MSC office based aboard one of the pre-positioned force ships so that it will move with the ships, no matter where they may go. It is the first MSC office ever established afloat.

Other examples of MSC organizational dynamics are changes in the size and composition of headquarters and area command staffs in response to surging requirements such as those generated during the United Nations war in Korea, and subsequent U.S. involvement in a war in Southeast Asia, or by assignment and continuing growth of its scientific and fleet support missions. Beginning in 1972 with the assignment of one Navy oiler to MSC for manning and operation, MSC operated about 30 fleet support ships by early 1981. In the early 1980s, MSC assumed responsibility for ships dedicated to support of the Rapid Deployment Force (RDF).

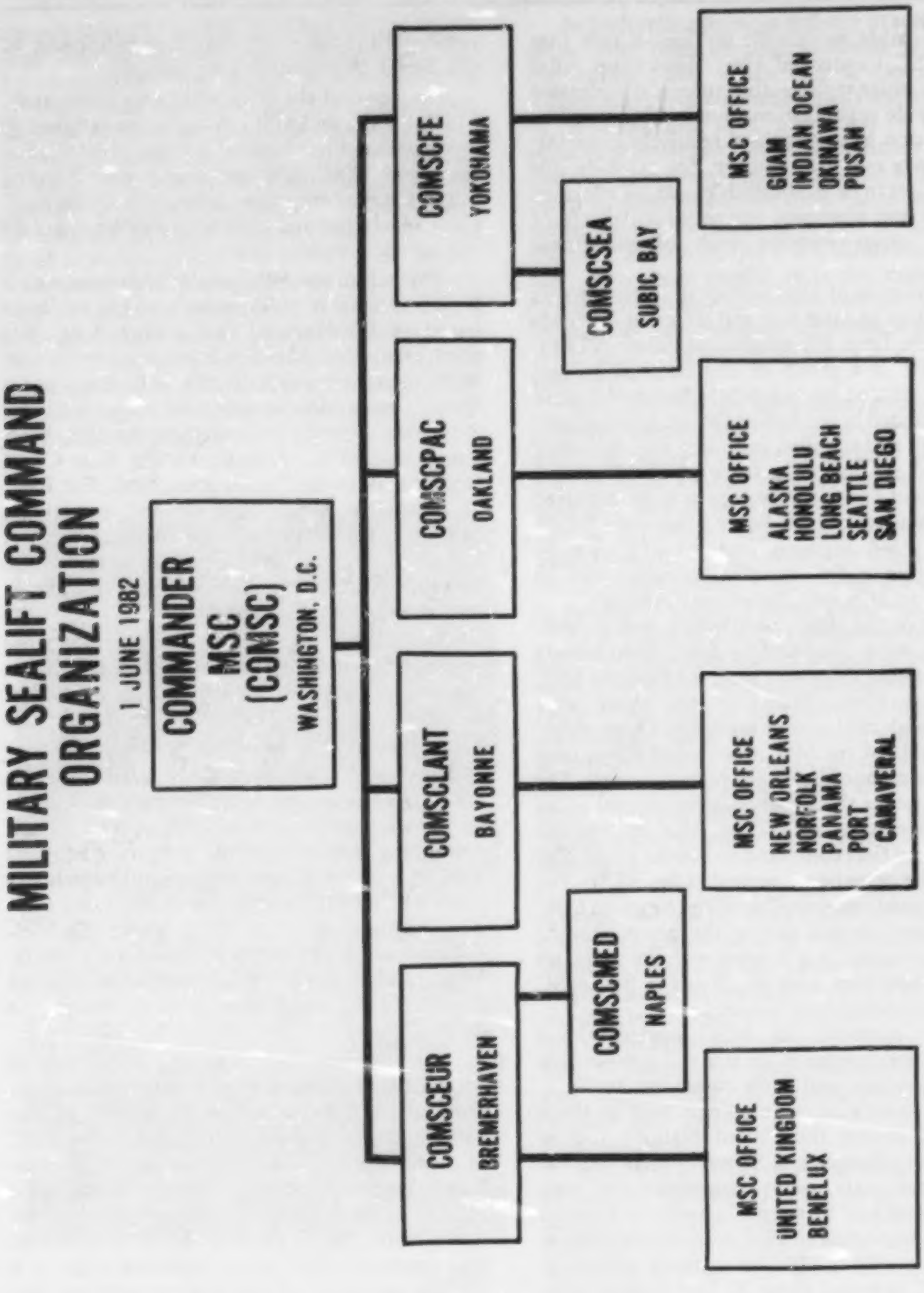
Only two of the four MSC area commands, MSC, Pacific and MSC, Atlantic are assigned to and exercise direct control over ships. MSC, Far East and MSC, Europe coordinate shipping matters in their respective areas, by both the MSC Controlled Fleet and commercial carriers, but do not operate organic fleets.

The hub of the MSC worldwide organization is the command headquarters which has been based in Washington, D.C., since MSC was founded in 1949. Major subelements are the four MSC area commands (figure 3-4). Each has a specific geographic area of responsibility (figure 3-5). MSC, Pacific is located on the U.S. West Coast and MSC, Atlantic on the East Coast (figure 3-6). In the Pacific area, MSC, Far East, at Yokohama, Japan, controls MSC operations. MSC, Europe, located at Bremerhaven, Germany, has similar responsibilities for Western Europe and the Mediterranean Sea area. All commands report to the MSC Commander.

Two subarea commands report directly to the commander of an area command. The subarea command, located at Naples, Italy, is an element of MSC, Europe. The other, located in the Phillipines, is part of MSC, Pacific.

Smaller MSC organizations, known as offices, are located wherever sealift operations demand on-the-spot supervision of MSC operations and continuing liaison with the military customers MSC serves as well as with the maritime industry from which MSC procures both ships and shipping services. In late 1981, about 15 MSC offices were in operation in varied world ports. When establishment of a fully staffed office is not feasible, MSC establishes one- or two-person units.

The veritable earth-spanning spider web of MSC organizations is further supplemented by cross-service representatives designated by the command and responsible for representing MSC in areas where no around-the-clock representation is demanded. A cross-service representative may be a member of an embassy staff, or an Army, Navy, or Air Force transportation officer who represents MSC as an additional duty, or a civilian employee of the military services who operates in much the same manner.


MILITARY SEALIFT COMMAND
ORGANIZATION
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COMMANDER
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(COMSC)
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MSC OFFICE
NEW ORLEANS
NORFOLK
PANAMA
PORT
CANAVERAL
COMSCPAC
OAKLAND
MSC OFFICE
ALASKA
HONOLULU
LONG BEACH
SEATTLE
SAN DIEGO
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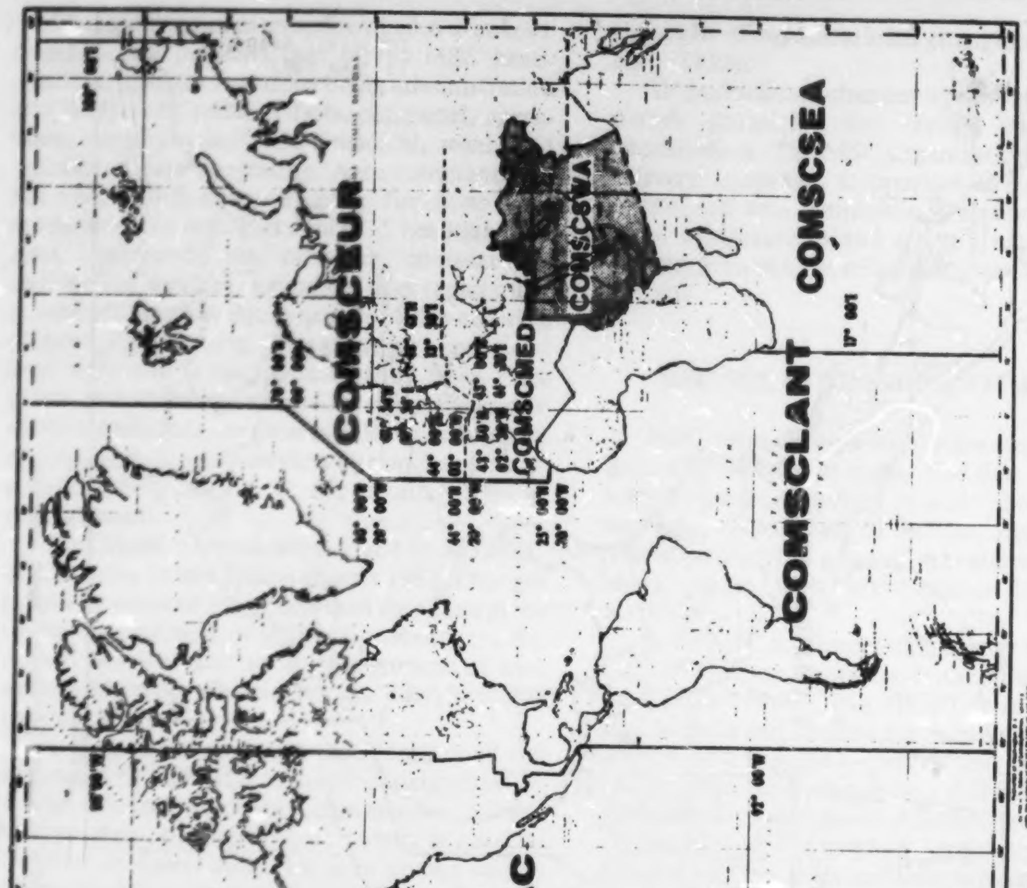
GUAM
INDIAN OCEAN
OKINAWA
PUSAN

Figure 3-4.—Military Sealift Command organization.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SUBAREA COMMAND BOUNDARY
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Figure 3-5.—Boundaries of MSC areas and subareas.

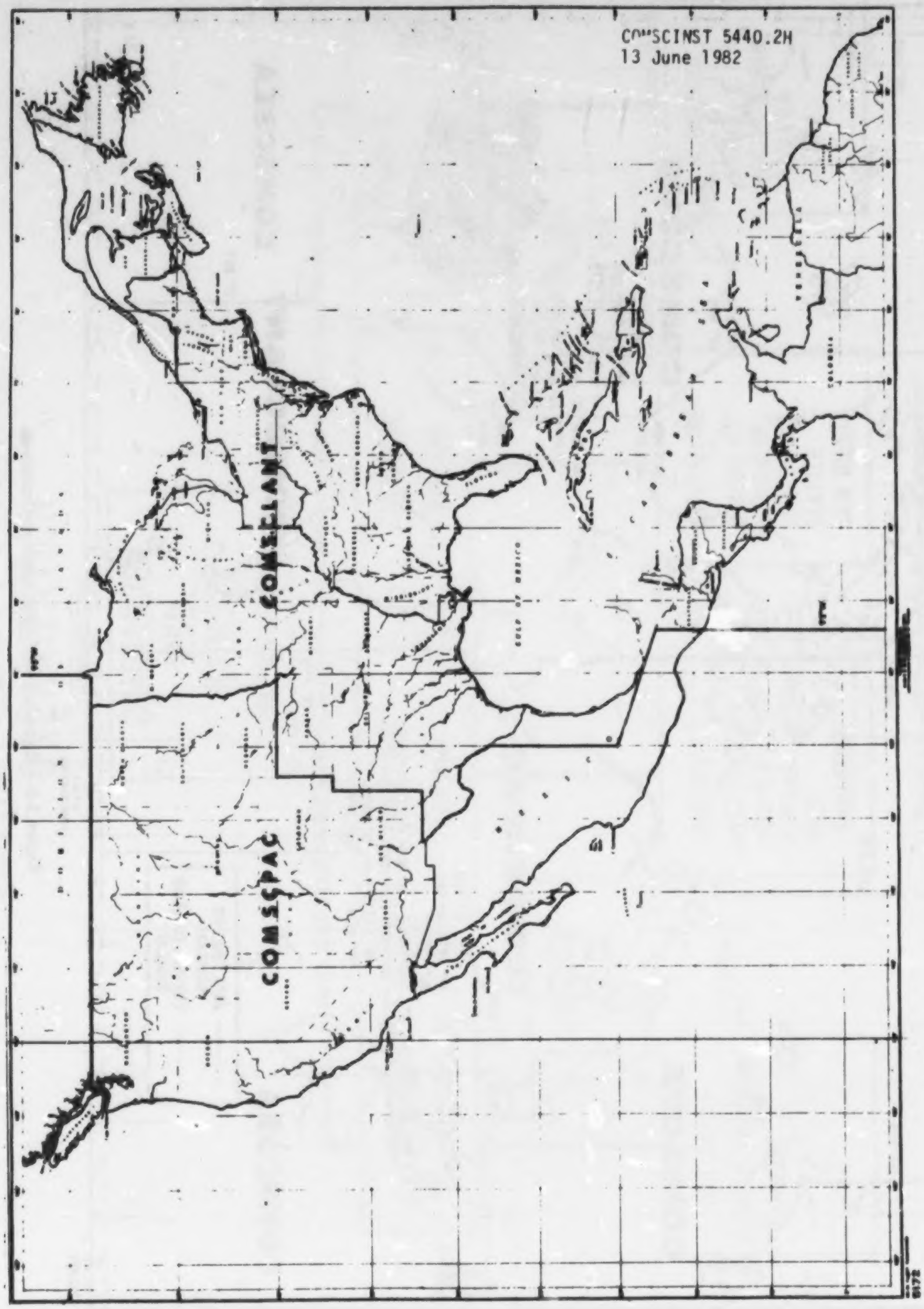
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Figure 3-6.—MSC command boundaries (North America).

The organizational structure of each area command closely parallels that of the MSC headquarters, primary functions being administration and manpower, public affairs, personnel, operations, supply, comptroller, medical, legal, and automated data processing. Area commands do not have significant contracting functions since procurement is centralized in MSC headquarters. Area commands do, however, contract for engineering services, including ship repairs and purchase of marine equipment for ships and ship support. Procurement done at the area command level normally is by solicitation of fixed price offers, rather than by competitive negotiated procurement which is the general rule for acquisition of ships and shipping services by command headquarters. See chapter 10 for details on MSC procurement.

Significant changes were made in the MSC organization in late 1981 and early 1982. Changes primarily resulted from increased emphasis given to the development of strategic mobility for the Armed Services and to the assignment of new ships and responsibilities to the Navy's sealift command.

Among the changes were restoration of the command to three-star status and assignment of a rear admiral as deputy commander. In the headquarters, the deputy commander is also the Director of Operations. He is in charge of the following divisions: fleet operations, readiness (a new organization concerned with both manpower and ship and shipping assets), transportation, engineering, medical, supply, and strategic mobility.

Headquarters' functions of a support nature were put under the control of a Director of Staff Services. They include: administration and manpower, civilian personnel, comptroller, counsel, command information system, and contracting. The director also has other functions; reporting directly to the commander as a personal shipping and business advisor, and responsibility for coordination and liaison with the private maritime industry. Other officers responsible directly to the commander are the Equal Employment Opportunity Officer and an Assistant for Special Programs, primarily those involving information systems and data processing. Legislative and public affairs was made directly responsible to the deputy commander as part of the series of organizational changes made in the early 1980s.

Organizational changes within the area commands paralleled the revised headquarters organization. The MSC organization serves two primary purposes. It provides a structure for developing and maintaining relationships with other organizations and a base for formulation and implementation of an effective management concept.

MSC RELATIONSHIPS WITH DOD

MSC relationships with other organizations generally are of two types. The first consists of varied interrelationships between the command and other Department of Defense organizations. The other includes a variety of external relationships, those with non-Defense Department activities.

Since MSC is the operating agency for Department of Defense sealift, the commander and staff have close contact with the office of the Assistant Secretary of Defense for Manpower, Reserve Affairs and Logistics—just as they do with the comparable Navy functions, ASNS&L and its subordinate organization ASNS&MA. Cost and efficiency of MSC operations, acquisition of MSC Controlled Fleet ships and shipping services, contractual operations of ships, new ship designs, modification of existing ships, and capabilities of the National Defense Reserve Fleet, and other sealift augmentation programs are matters of direct interest to the Department of Defense.

Defense procurement policies as set forth in the Defense Acquisition Regulation, in other instructions, and in procurement focused Federal statutes, require Defense-MSC coordination as does the establishment of MSC, Navy, and Department of Defense positions on a wide range of proposed maritime legislation. Of particular interest to Department of Defense are sealift augmentation programs, including the Sealift Readiness Program which MSC administers but for which the Department of Defense establishes guidelines and policies. Implementation of the Sealift Readiness Program would require Defense Department approval, as would any MSC attempt to secure additional tanker tonnage through the Voluntary Tanker Agreement. Both of these programs and the readiness programs are covered in chapter 12.

MSC relationships with the Joint Chiefs of Staff are varied and continuing. Since sealift requirements are generated by JCS-approved emergency, contingency, and general war plans, JCS reviews transportation plans developed by MSC to support those operational plans. One result is continuing coordination between MSC and the Joint Deployment Agency—the JCS coordinating authority for deployment planning, for development of unit movement tables and schedules, and for monitoring troop and cargo movements. JCS also funds some planning efforts by the jointly staffed MSC Strategic Mobility office. As mentioned previously in this chapter, JCS is the agency responsible for allocation of sealift priorities to MSC whenever such action is deemed necessary.

MSC relationships with the commander-in-chief, for example Commander in Chief, Pacific Fleet (CINCPACFLT) or Commander in Chief, Europe (CINCEUR), also are clustered around MSC sealift planning and operational functions. However, in recent years, a new dimension has been added to MSC relationships with Navy fleet commands as the number and type of auxiliary ships assigned to the command-operated Naval Fleet Auxiliary Force has grown. Schedules for fleet support ships, for example, are prepared by the fleet to meet fleet requirements. Scheduling of fleet support ships for extended overhauls or repairs requires close MSC-fleet coordination as does evaluation of fleet support ship operations and training of civilian mariners employed by MSC. Funding is another area requiring continuing coordination.

The Army, Navy, Marine Corps, and Air Force are referred to by MSC as "shipper services." Each service provides MSC with an annual estimate of its sealift requirements for the next fiscal year. Those estimates, along with varied operational and emergency plans, are used to develop an annual command operating budget

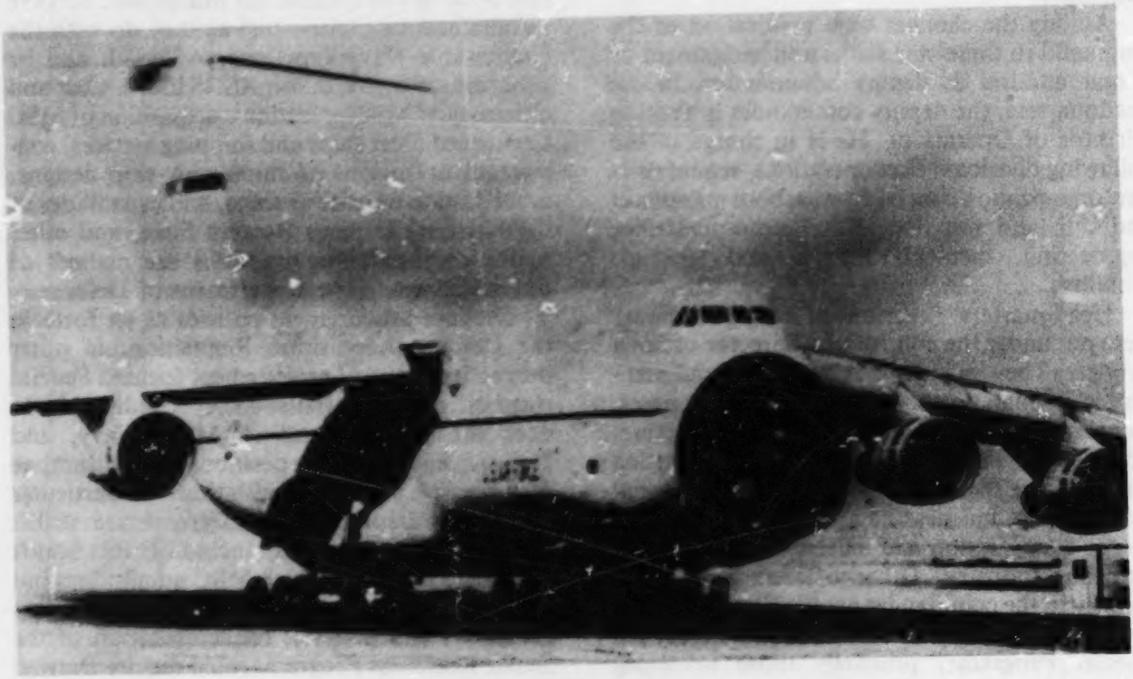

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Figure 3-7.—Air Force Military Aircraft Command (MAC).

and to determine the optimum size and configuration for the MSC Controlled Fleet. Basically, the relationship between MSC on one hand and the "shipper services" on the other is that of supplier and consumer. The ultimate goal of MSC is to assure satisfied customers.

MSC is one of three Defense Department organizations assigned transportation as a primary mission. All three are designated transportation operating agencies, or TOAs. Just as MSC is the single manager operating agency for sealift, the Air Force's Military Airlift Command (MAC) is the Department of Defense single manager operating agency for airlift (figure 3-7). The Army's Military Traffic Management Command (MTMC) is the single Department of Defense manager for traffic management. In that capacity, MTMC receives transportation requirements from the other services and forwards them to one of the two mobility operating agencies, MSC or MAC. These agencies then book the cargo aboard scheduled commercial carriers, or move it by use of organic fleet resources—in the case of MSC in MSC Controlled Fleet ships. (Chapter 8 covers the Defense transportation system while chapter 12 describes MSC roles in developing sealift readiness capability.)

MAC provides airlift services for MSC; examples being the rotation of ship crewmen, including lifts to and from hard-to-reach destinations such as Diego Garcia in the Indian Ocean, or delivery of equipment needed by a ship before it can resume normal operations.

MSC tanker operations, unlike those of dry cargo ships that are controlled by either MSC, Pacific or MSC, Atlantic, are directed from MSC headquarters. A primary reason is that the Defense Fuel Supply Center (DFSC) also is Washington-based. DFSC is responsible for procuring all petroleum products required by the U.S. Armed Forces. Co-location of DFSC and MSC in the metropolitan District of Columbia area assures effective coordination and increases responsiveness to demands for emergency ship diversion or lift of cargo. MSC and MTMC historically have been based in the metropolitan D.C. area for the same reasons.

MSC RELATIONSHIPS WITH OTHER ORGANIZATIONS

External MSC relationship include those with Federal regulatory or promotional agencies, with other department level Federal organizations, and with both maritime labor and management.

Department of Energy relies on MSC for procurement of tankers (figure 3-8), including very large crude carriers of several hundred thousand dead-weight tons and smaller tankers used as shuttle ships, for the movement of much of the crude oil being stored in Gulf Coast salt domes under its Strategic Petroleum Reserve program. That service, essentially a procurement function, is provided by MSC in accord with a memorandum of agreement between the Secretaries of Defense and

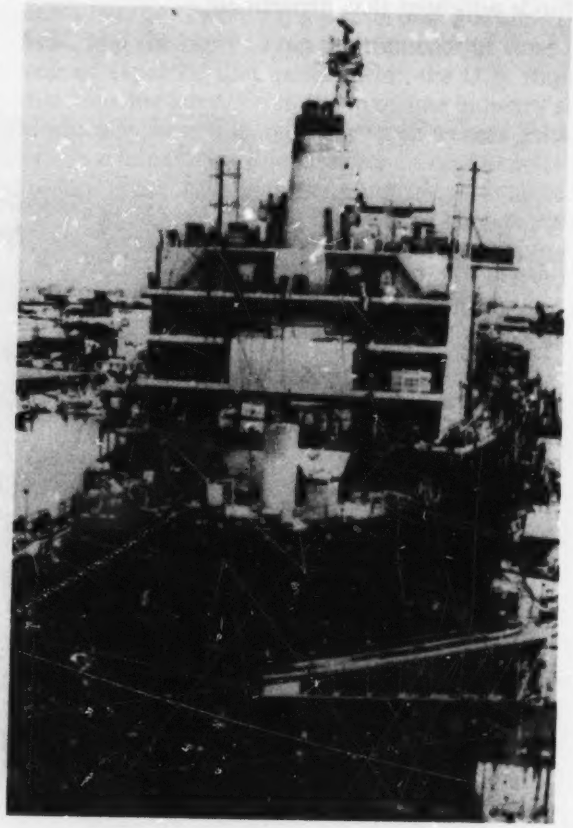

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Figure 3-8.—An MSC tanker (POL).

Energy. Under that same agreement, Defense Fuel Supply Center procures the crude oil to be stored in the underground caverns—much of which is purchased "laid down"; that is, delivered by the supplier.

While MSC often responds to requests from the Department of State for emergency sealift or humanitarian assistance, requirements generated by the Department of State are funneled through the Department of Defense. Typical examples were MSC evacuation of more than 179,000 refugees fleeing South Vietnam before that country's fall to communist forces and the delivery of millions of gallons of potable water to Curacao, an island in the Caribbean, when its desalination plant failed. In such cases, MSC bills Department of State for services rendered, and Department of State either collects the cost from the countries involved or reimburses MSC from appropriated funds allocated that department.

The relationships of MSC to the two Federal agencies most directly involved in maritime matters, the Federal Maritime Commission (FMC) and the Department of Transportation's Maritime Administration (MARAD), are covered in chapter 7.

The primary role of the Maritime Administration is to advance the well-being of the U.S. maritime industry. In that capacity, it represents the industry in day-to-day dealings with MSC. The Maritime Administration also is responsible for maintenance of the National Defense Reserve Fleet (figure 3-9) and the group of ships within the NDRF known as the Ready Reserve Force that can be ready for operation within 10 days if needed. In its efforts to assure sealift readiness, MSC works closely with the Maritime Administration staff.

MSC also reviews designs for new merchant ships and makes recommendations to the

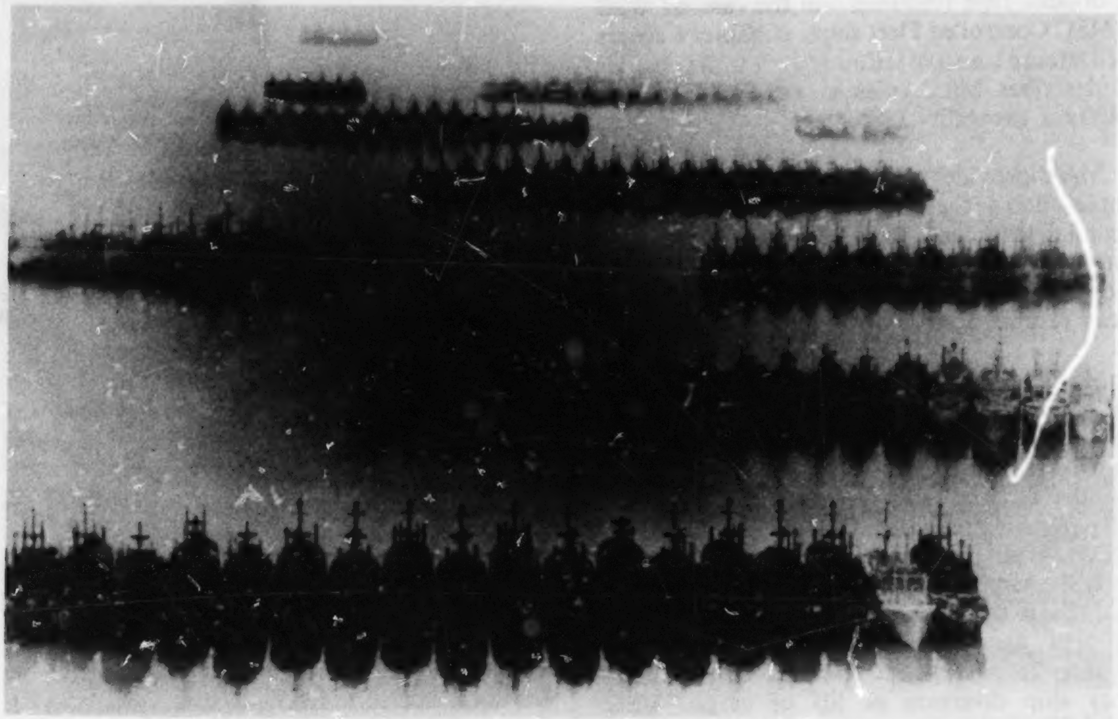

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Figure 3-9.—National Defense Reserve Fleet (NDRF) or known as Ready Reserve Force.

Maritime Administration concerning incorporation of national security features in such ships at the time of their construction. In addition to coordination on a function-to-function basis that takes place routinely, MSC and Maritime Administration officials meet jointly in more formal groups set up to ease Navy/MSC/Maritime Administration coordination, a recognition of the fact that by statute the U.S. merchant marine is expected to be able to augment the Navy fleet in time of emergency or war. MARAD needs information concerning military requirements for its own planning and the Navy must be familiar with merchant marine capabilities.

MSC's relationship with FMC is less broad since FMC is a Federal regulatory agency and is responsible for protecting the interests of the sealift consumer. Matters which typically concern both FMC and MSC include proposed amendments to existing legislation or suggested legislation, as well as the applicability of FMC regulations. Another concern is the fairness of rates charged the military services by private carriers. Most MSC contacts and coordination with FMC officials are carried out by lawyers, the primary exception being the senior level relationship of the MSC Commander with the chairman and commissioners of FMC.

The MSC Commander maintains similar face-to-face relationships with the senior executives of the shipping companies operating common carriers and other ships which support MSC in peacetime—ships MSC relies on for emergency sealift augmentation. It is this direct and informal relationship at the executive level that allows MSC to effectively serve as the Navy's primary liaison agency with the maritime industry. That relationship allows industry officials to make their views known to military transportation people in an informal yet timely, frank, and effective manner.

But, the chain between MSC and the maritime industry has many links. Command operations people, for example, communicate with carrier representatives on a day-to-day basis assuring that ships are where they should be, that military cargo is protected, loaded, and discharged, and that both routine and emergency sealift needs are fulfilled.

Contact between MSC contracting personnel and industry officials is equally close. With approximately 85 percent of MSC's annual $1 billion revenue being paid to industry for services rendered, MSC is a "big customer" for the carriers. It is the know-how of MSC procurement officials, gained from first-hand contact with their counterparts in industry, that enables MSC to be responsive to Department of Defense requirements for reliable, economical, and effective ocean transportation.

In recent years, MSC has sought to strengthen its working relationships with industry. One method has been to involve the carriers in presolicitation conferences so that they know what types of ships or shipping services are needed by the command. Periodic conferences also have brought together senior industry and military officials involved in military planning to provide industry with a clearer perception of what the Department of Defense sealift augmentation needs may be. Two-way, top-level dialogue allows MSC and the Navy to tap the tremendous reservoir of expertise that exists within the U.S. flag maritime industry. From the maritime industry's viewpoint, strategic mobility conferences and sealift seminars provide industry an opportunity to participate in military planning and to provide the type of realistic input that they sometimes thought lacking in past years. Even more important is the National Defense Executive Reserve, a program which enrolls industry officials and involves them directly in mobility planning, mobility exercises, and a wide range of military transportation matters.

MSC relationships with the shipbuilding and repair segment of the maritime industry also are close. As a matter of policy, MSC relies primarily on commercial facilities for repair and overhaul of its ships, for providing designs and design specifications for new ships it may seek to acquire, for modification and modernization of ships MSC now operates, and for assuring that MSC ships meet standards set by the U.S. Coast Guard and the American Bureau of Shipping. Bids for ships, supplies, or services MSC needs are secured by competitive procurement under the Defense Acquisition Regulation. More information covering MSC procurement is in chapter 10. Chapter 7 explains MSC relationships with the Coast Guard.

In addition to maintaining a working relationship with maritime management (ship operating companies and the shipyards), MSC has comparable ties with maritime labor unions. There are more than 20 U.S. maritime unions, nine of them major unions representing oceangoing mariners. They range in size from the 45,000-member (25,000 mariners) National Maritime Union to the 200-member Marine Staff Officers. All are affiliated with the American Federation of Labor-Congress of Industrial Organization, better known as the AFL-CIO. The unions represent masters, mates, pilots, engineers, stewards, radio officers, deck officers, and unlicensed mariners. Since the late 1970s and early 1980s, there has been a strong trend toward consolidation of maritime unions.

As U.S. Government employees, MSC mariners cannot be forced to join unions as a condition of their employment. But, many if not most civil service mariners do become union members. Unions are required to represent all employees in their bargaining units, even those who are not union members. The unions negotiate agreements with MSC covering mariners employed by the command. Civil service mariners also can take advantage of civil service grievance systems. They receive many of the benefits of Federal employment, such as job stability, leave, and health insurance.

Unions also enter into labor-management contracts with private companies which have contracts with MSC for the manning and operation of command tankers. The bulk of MSC tankers are operated by private contractors. Personnel needed to man the MSC-controlled tankers are provided by the maritime unions, although MSC has retained the right to approve the hiring of senior officers such as the masters and chief engineers. Unions also enter into contracts with owners and operators of privately owned ships chartered to and controlled by MSC.

Generally speaking, pay and work rules which apply to MSC civil service mariners must be in accord with prevailing pay rates and work rules for private industry. That does not mean they must be identical, since some types of MSC-operated ships, such as fleet oilers, combat stores ships, and scientific support ships have no counterpart in industry. The result is considerable leeway for MSC officials and union officers in arriving at agreements to establish fair rates of compensation and the work rules that apply to civil service mariners.

There are, of course, limitations to actions taken by MSC. An example is pay caps applied to all Federal employees. A pay cap, subject of past court actions by the unions, can limit both periodic pay raises and annual income to levels below those prevailing in commercial industry. But, that limitation is balanced to a significant degree by the stability of Federal employment and civil service leave and retirement benefits. The latter can be substantially greater than the retirement benefits available through the unions. All temporary employees who do not contribute to Federal retirement are covered by Social Security.

Throughout its history, MSC has benefited from no-strike provisions by the maritime unions. In no significant case has military cargo been delayed or prevented from moving as the result of a maritime strike. The main points of contention between MSC and the maritime unions have been the result of two factors. First is the competition that exists among the different unions. Unions' support of offers to MSC by the maritime companies the unions represent to secure MSC ship operating contracts, and the maritime companies can be in direct competition with one another. The second stems from the fact that MSC does not make contributions to union pension and welfare funds as private ocean carriers do. Even though MSC civil service mariners who choose to join the unions pay union dues, the pension and welfare funds do not receive contributions from MSC. It is understandable, at least from the unions' standpoint, that they often have supported recommendations to have MSC Controlled Fleet ships operated by contractors and manned by mariners supplied by the unions rather than civil service employees of the Navy. That assures management contributions to the pension and welfare funds. A primary union interest in addition to creating and protecting jobs of their members is assuring the stability of union pension and welfare funds by strengthening funding of these programs.

It should be evident even from this cursory review of MSC relationships with other elements of the Department of Defense, with Federal agencies, and with maritime industry management and unions, that effective communication and a workable concept of management are vital to successful completion of command missions. Organizations with whom MSC deals have their own constituencies. They support their particular interests. MSC's responsibility, inherent in its fivefold mission, is to provide the most responsive, reliable, and economical services it can by encouraging understanding, and cooperative mutually beneficial effort among Federal agencies and the private sector maritime industry. That complex and demanding responsibility requires that MSC have a workable management philosophy and an integrated approach to its implementation of that philosophy.

PLANNING AND MANAGEMENT OF SEALIFT OPERATIONS

In developing its management philosophy, MSC has recognized the reality of limitations on command management efforts. One such limitation is the external formulation of command objectives and the policies the command must follow. Another limitation is the lack of MSC control over the timing and scope of operational requirements levied upon it. MSC operations are primarily reactive-responsive in nature, often changing to meet unanticipated requirements. MSC management is focused primarily on the short-term, on development of reactive capability or flexibility, on responsiveness, and on coping with a workload historically marked by peaks and valleys.

MSC revenue is derived primarily from the services it renders its customers. Thus, there can be lags between funding needed to support suddenly increased workloads—for example, those posed by emergency or contingency commitments—and revenue normally received only after MSC services have been provided. In some instances, emergency funding is provided to MSC. However, short-term management planning must always consider a long-term objective assigned to the command, and the balancing of expenditures and income to assure that the command neither makes a profit nor suffers a loss.

Another set of conflicting factors that influence the command's management philosophy are inherent in its worldwide organization. Like most line-type organizations, MSC policies and directives flow vertically from top to bottom. Establishment of command policies and programs demand feedback from field units and two-way communication must be both timely and complete—that is command wide—if the command is to assure its overall homogeneity.

Immediate responsiveness to unanticipated demands and flexibility in the employment of command resources can demand on-the-spot decisions. There may be little time to refer a problem to higher headquarters. In such case, no matter at what level the emergency decision is made, the person exercising that authority also must accept responsibility for his or her actions. MSC managers frequently are assigned a heavier burden than those of equal rank in a purely military type of organization.

MSC managers also have access to a wealth of transportation expertise since they are in continuing contact with members of the maritime industry. When instructions or regulations are not specifically applicable to a given situation, they frequently can harness the knowledge or first-hand experience of maritime professionals. It is not often necessary for an MSC manager to, in effect, "reinvent the wheel" to keep military cargo moving.

That points up another factor MSC managers must consider in managing command operations—their unique partnership with private industry. MSC exercises no control over the industry except that gained from its status as a "good customer." It is, in fact, often in direct competition with private shippers for ships and shipping services. MSC procures resources and services in an open market, and the cost of those services is normally proportionate to the demand for them. The more the Department of Defense needs ships or services from private industry, the higher the value placed on those ships or services by the offeror. Taken one step further, the greater the emergency and the more immediate the required response, the higher the cost normally will be to the military services. Since most emergencies are seldom fully anticipated, there can be a significant impact on transportation budgets—one which again requires effective "reactive management."

Given all these influences, establishment of a command management philosophy and effective implementation of that philosophy have roughly the same relationship as the chicken versus the egg argument. Which came first? The answer is neither and both. Beginning in the late 1970s and early 1980s, MSC began focusing a great deal of effort on simultaneously establishing a coherent management concept and developing a command-wide informational system to implement that concept. The intent was to improve planning, and thus minimize those occasions where the command could be forced to react to meet unforeseen challenges.

Because this has not been a controlled evolutionary process with a beginning and an end, there is no neatly phrased, 50-words-or-less summary of what the resulting philosophy is. But, it can be described as objective oriented. It is geared toward development of the capability to meet requirements set forth in contingency, emergency, and general war planning. It stresses the need for gathering empirical data for two purposes; (1) for analysis of MSC operational effectiveness and (2), for monitoring MSC progress toward the attainment of command-established objectives. While MSC management programs are expected to produce long-term benefits when measured against national security goals, management of command programs and resources is focused primarily on a continuing series of short-term achievements. Emphasis on timeliness is a key to assuring sealift flexibility and the responsiveness needed to meet unanticipated requirements. A final tenet of MSC management philosophy is that it is as fully participatory as possible. Two-way dialogue is encouraged among all command elements, between the command and the maritime industry, between the command and other Federal agencies, and—most important of all—between the command and its customers.

In the late 1970s, MSC initiated a management program that has become better known by the inevitable military acronym IMIS. The actual title is Integrated Management Information System. While the full program is not expected to be completely operational until 1988, many of the elements of IMIS are already functioning. Most were active in the early 1980s.

Basically, IMIS provides a means of determining who is doing what; in actuality rather than as listed in organizational manuals. It pinpoints where decision making currently takes place in the overall management process, and it provides a means of acquiring, storing, and retrieving data needed by the people who make decisions and who shape, monitor, or evaluate command programs.

At the core of the IMIS system are five planning systems, the first of which is STRATEGIC PLANNING. The goal of the strategic planning system is to develop realistic scenarios that provide a means of identifying anticipated sealift requirements—and which allow the setting of standards against which capability can be measured.

The second IMIS system is DEVELOPMENTAL PLANNING. Its purpose is to provide a more structured means of determining what needs to be done, what the organizational needs are, and how many and what types of ships will be needed. The third system, OPERATIONAL PLANNING, is geared to initiation of budget planning and properly assigning specific responsibilities to command functions and individuals within those functional offices. Phase two of operational planning is the actual budget-setting process with the final product being the result of top-down, bottom-up flow of information among command managers. And, because of command emphasis on participatory management, the range of sources for budget input has been broadened so that managers at all levels are involved in determining the resources they need as well as in controlling the resources allocated to them.

The fourth IMIS system is PROJECT PLANNING. It provides a formal means of analyzing requirements and empirical data and establishing and monitoring special projects needed to achieve command objectives. A typical example is a project established in early 1980 to improve management and use of intermodal transportation resources and services available to the Department of Defense. Initiated by MSC, a container management program quickly gained Defense Department approval. Membership of the special project group was broadened to include representatives of key shipper services and a number of changes were implemented that have improved capabilities of the overall Defense Transportation System.

The fifth IMIS planning system carries the planning process one step further. PROGRAM PLANNING orientation generally is more long term than is project planning. It also requires a greater array of human skills and a team approach to management. A typical example from the past might be MSC's build and charter program for ship acquisition. A fully integrated management approach to ship acquisition would necessarily involve MSC customers, engineering, operations, contracting, the command counsel and command comptroller, and several other functions—including supply, medical, and other support-type offices.

Tied to the five planning systems are IMIS systems for monitoring progress and identifying problems and for providing analytic capabilities or other forms of assistance as across-the-board employee involvement in the MSC management process. No one's turf has been threatened by adopting an Integrated Management Information System throughout the command. The concept has tended to encourage cooperative effort while breaking down departmental barriers that can be—and probably have been—limiting factors to successful management within MSC in the past.

SEALIFT RESOURCES

Resources available to the MSC manager generally fall into four categories. They are people, ships and ship support systems, facilities, and money.

MSC facilities for support of worldwide operations are extremely limited since the command neither owns nor manages bases. The headquarters, area commands, and subordinate units traditionally have been housed in either leased commercial space or in Government-owned buildings. MSC is always a tenant, never a landlord. The command relies on commercial facilities for repair of its ships although it uses Navy yards when priorities permit. Warehouses needed for storage are either Government-provided or leased from private owners. MSC does, however, operate a machine shop-type facility as part of MSC, Pacific which has limited capabilities for repair or modification of command ships. While shop personnel have occasionally been used to monitor the work of subcontractors performing relatively large-scale ship modifications, they generally are restricted to limited types of repairs than can be performed in-house.

As noted several times in this chapter, MSC generally is funded through the Navy Industrial Fund. Appropriated Navy funds are received primarily for payment of military salaries and for purchasing special equipment not needed for direct support of ships MSC controls. Typical examples are the procurement of typesetting or photo reproduction equipment used in graphics, or printing equipment needed for administrative purposes.

Full information concerning the sources of MSC revenue, command expenditures, and financial management practices are contained in Chapter 11: "Financial Management."

In order of their normal use, sealift resources available to MSC include the MSC Controlled Fleet, ships or services procured from the U.S. merchant marine, ships taken from the National Defense Reserve Fleet, of which the Ready Reserve Force is a part, and procurement of foreign flag ships or foreign flag service. Two types of foreign flag ships are available to MSC; those owned by U.S. citizens or corporations but registered under foreign flags, and ships that are foreign-owned.

The MSC Controlled Fleet consists of two different groupings of ships; the nucleus fleet and the chartered fleet. At the beginning of the 1980s, MSC had more than 130 ships. Numbers vary somewhat as additional ships are chartered or acquired in some other manner, and as ships are laid up for reasons of age or lack of requirements for their services or disposed of because of their obsolescence.

The nucleus fleet consists of ships that are either Government-owned or are under long-term bareboat charter to the command. In early 1981, the dry cargo segment of the nucleus fleet included six specialized ships; four were roll-on/roll-off cargo ships and two were ice-strengthened breakbulk ships often used in the Arctic and Antarctic. Twenty-three of the ships were tankers; 18 were operated for the command by private carriers under MSC contract. Thirteen tankers were bareboat chartered for long terms while the others were Government-owned.

Twenty-one Government-owned scientific support ships were included in the MSC nucleus fleet in early 1981. They included ships that performed missile range instrumentation tasks, oceanographic research, surveying, and underseas surveillance.

Another 29 ships were in the MSC Nucleus Fleet in early 1981 as part of the Naval Fleet Auxiliary Force. All were Government-owned and many had been transferred from Navy fleets to MSC for civilian manning and operation—in direct support of fleet units. Included among the ships that MSC operates in support of the fleet are oilers, combat stores ships, ammunition ships, fleet ocean-going tugs, fleet ballistic missile supply ships, and cable-laying and repair vessels. It is anticipated that the size of the MSC-operated Naval Fleet Auxiliary Force will continue to expand, and other types of auxiliary ships are to be assigned to MSC for operation.

A primary reason for assignment of fleet support ships to MSC is that they can be operated at less cost with smaller civilian crews while simultaneously freeing highly trained military men for duty aboard combatants or more sophisticated ships. Since civilian mariners are by and large professionals who sign on for extended voyages, training requirements are minimized and there is no need for ships to return to homeports for regularly scheduled rest and recreation. Ships remain on station while their crewmembers are rotated at scheduled intervals, thus assuring an operating tempo substantially greater than for purely military-manned ships.

The chartered fleet consists, as the name implies, of privately owned ships chartered by the command to meet anticipated peacetime requirements while simultaneously providing an immediate response capability to meet emergency demands. In early 1981, there were more than 50 ships in the MSC chartered fleet. Thirty-one were dry cargo ships. Dry cargo ships generally represent the major part of the chartered fleet. Another 16 ships were tankers and the remainder had been chartered for performance of miscellaneous tasks such as target towing or special scientific support assignments.

Five of the tankers under MSC charter at the beginning of that year were engaged in delivery of crude oil for the Department of Energy Strategic Petroleum Reserve Program rather than for delivery of petroleum products for the military forces.

Both chartered and Government-owned ships controlled by MSC are pre-positioned in support of the Rapid Deployment Force. Their roles are discussed in Chapter 12: "Sealift Readiness."

Together, the nucleus fleet and chartered fleet—which make up the MSC Controlled Fleet—provide the immediate response sealift capability available to the Department of Defense. The size, the configuration, and the employment of that fleet are matters of direct concern for MSC managers. Cost of operation, scheduling of maintenance and repairs, updating of ship capability, training of crews, monitoring of contracts with private carriers, ship productivity and reliability, effectiveness of service provided, flexibility in meeting peacetime and contingency requirements, are but a few of the direct concerns associated with MSC management of its controlled fleet resources.

MSC managers also are responsible for the procurement of additional ships, for the procurement of complete intermodal shipping systems or services, and for maintaining effective working relationships with the merchant marine. To ease the development of emergency sealift capability, the command must use commercial peacetime capability as fully as possible. However, MSC also must reap maximum productivity from controlled fleet assets already available. They represent an MSC expenditure whether carrying military peacetime cargo or being maintained in reduced operating status. The dual and sometimes conflicting problem for the MSC manager is to assure that everything possible is done to develop and maintain readiness to support military forces in an emergency while simultaneously providing effective and economical service to those same forces in normal or peacetime situations.

A significant part of that overall effort is in the procurement area; identifying requirements and then assuring that assets secured are neither too little to do the job nor too costly to maintain.

Much of that effort also is exerted in the field of personnel management. MSC has approximately 7,000 military and civilian personnel. About 1,700 of the total fill ashore jobs. Less than 300 ashore jobs are filled by military personnel, the rest by civil service employees of the Navy. The seafaring work force used by MSC consists of approximately 5,350 people—about 350 are military men or women. Almost all of the Navy active duty personnel are assigned to liaison or communications billets aboard Naval Fleet Auxiliary Force or scientific support ships.

The more than 5,000 civil service mariners employed by the command man fleet and scientific support ships, a few of the Government-owned tankers, and a few nucleus fleet dry cargo ships the command operates. Since 1980, MSC also has manned some Near Term Pre-positioned Force ships with civil service mariners. Most of the ships are chartered or contractor operated with crews provided by the unions.

Civil service mariners are excepted Federal employees, differing from classified civil service employees primarily in that their wages and the work rules covering their jobs are based on pay scales and work practices prevailing in the private sector maritime industry. They draw regular civil service leave benefits, retirement benefits, and avail themselves of civil service grievance benefits and advantages generally associated with civil service employment.

MSC recruiting efforts for licensed personnel are directed primarily toward graduates of the U.S. Merchant Marine Academy at Kings Point, New York, and the several federally supported state schools with maritime-oriented curriculums. Union supported schools are a key source of unlicensed personnel and licensed officers. In effect, MSC recruits most of its mariners (figure 3-10) from the same maritime work force that is relied upon by the private sector.

However, MSC also likes to recruit former Navy personnel—particularly those with Navy fleet support experience—for its civilian manned ships. Emphasis on recruiting experienced people, all of whom have or can obtain documentation of their seafaring skills from the U.S. Coast Guard tends to minimize entry level training MSC must provide.

Training is an important aspect of MSC management efforts. In the 1980s, the command began stepping up its efforts to provide training opportunity. One result is that employees who aspire to obtain licenses or to upgrade presently held licenses can attend maritime schools of their choice, and be reimbursed by the command following successful completion of their training. MSC mariners also attend military schools (figure 3-11); for example, fleet support training courses in control of helicopter operations aboard ships, and safety schools or other training offered by Navy units. Other training is provided by sending MSC mariners to industry operated schools or by encouraging them to take union offered training courses. Although MSC mariners are not offered Ready Reserve status because of the nature of their duties, they may belong to either the Active or Inactive Standby Reserve.

30.190

Figure 3-10.—A civil service mariner.

Ready Reservists have mobilization assignments and participate in drills, some of them in pay status. Standby Reservists do not drill, but they can be mobilized if needed—after mobilization of the Ready Reserve. The Merchant Marine Reserve is a Standby Reserve program. Its members would continue to work in industry or MSC ships in an emergency; benefiting from training provided in Navy fleet policy, operations, and procedures.

In effect, personnel management exercised by MSC is not much different than for any similarly sized corporation, except that MSC

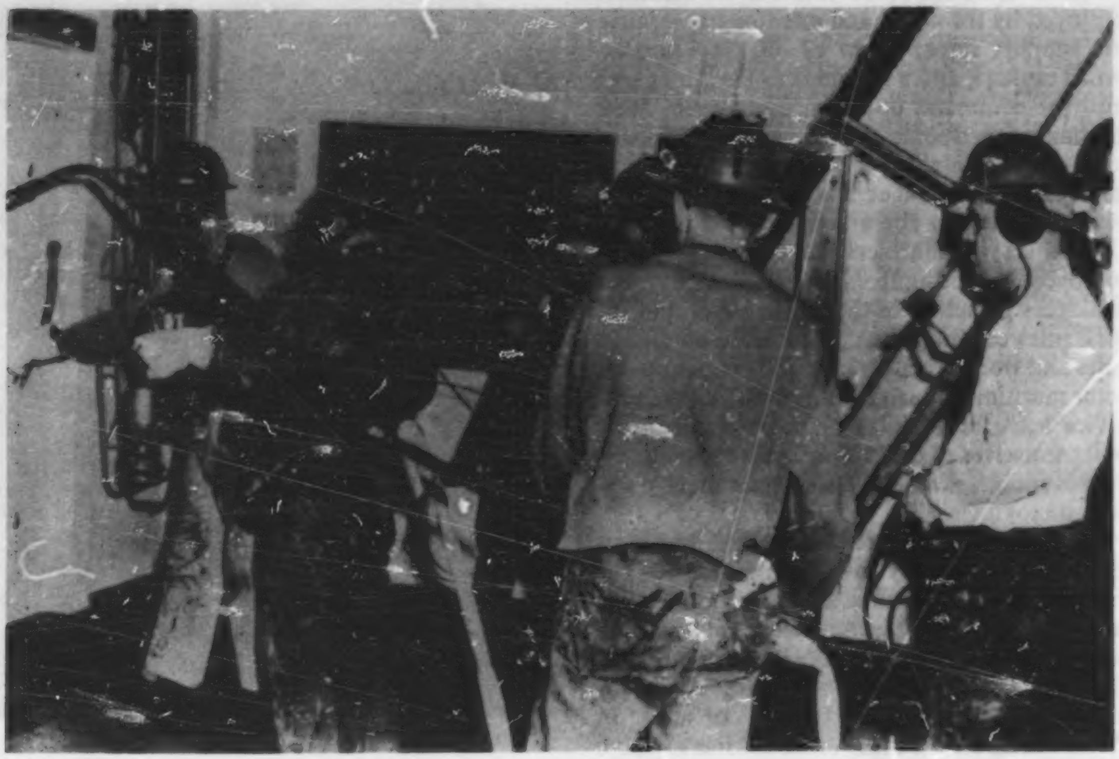

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Figure 3-11.—Damage control training.

mariners work worldwide and are simultaneously members of the maritime industry work force and are on the Federal payroll. Those differences illustrate why MSC is unique as a military organization, and why the command offers great opportunity for both managers and those who aspire to management positions.

An important part of the MSC personnel resource pool is the young man or woman who is a participant in the Naval Reserve program. MSC sponsors more than 45 Naval Reserve units. In addition, the MSC Commander is the technical program manager for the Naval Control of Shipping Organization (NCSORG) and the Operational Control Authority (OCA), programs almost completely staffed and supervised by reservists. The CNO is the sponsor of the NCSORG and OCA programs with the MSC Commander double hatted as administrator of the programs.

Missions of the five basic types of units for which MSC supervises training and provides management assistance include administration and control of troops lifted aboard ships, establishment of additional MSC offices in an emergency, establishment of small headquarters units to support command expansion, establishment of offices to control shipping and maintain Navy-merchant marine liaison, and providing staffs for support of convoy commodores embarked aboard merchant-type ships.

Altogether, the number of reservists assigned to MSC-sponsored and CNO-sponsored Naval Control of shipping Organization units almost matches command active duty strength and would facilitate rapid expansion of the command. Full information concerning the Naval Reserve program is contained in the final chapter of this text, a chapter that deals with sealift augmentation programs and sealift readiness.

MILITARY SEALIFT COMMAND WORLDWIDE ORGANIZATION

(See COMSCINST 5440.8 series)

FUNCTION	CODE	PRIMARY RESPONSIBILITIES
Commander, MSC	M-00	Provides overall command guidance; directs command operations as executive agent for DOD single manager for sealift; establishes command policies and procedures; serves as type commander for the nucleus fleet and as head of a major Navy procurement agency; administers the Navy Industrial Fund; acts as advisor on sealift, and other matters related to command missions, to SECNAV, CNO, JCS, CINCs, and shipper services; maintains liaison with civilian maritime industry and maritime labor for Navy; recommends policy and serves as program sponsor for the Naval Control of Shipping Organization (OP-06N), Operational Control Authority (OP-094), and the MSC Naval Reserve (OP-04) programs; is responsible for developing both peacetime ocean transportation capability and sealift readiness capability in support of Army, Navy, Marine Corps, and Air Force requirements. Directs operations and establishes policies for MSC subordinate command units worldwide.
Deputy Commander, MSC	M-01	Assists MSC Commander in fulfillment of assigned responsibilities and serves as Commander in absence of that official; represents the Commander in meetings with JCS, SECNAV, CNO, CINCs, shipper services, Federal agencies, and in liaison with maritime industry management and labor. Also serves as MSC Director of Operations, supervising activities of subordinate commands and having direct control of all staff organizations primarily involved in operational matters, including Fleet Operations, Communications, Readiness, Transportation, Engineering, Medical, Supply, and Strategic Mobility. Directs and coordinates training of MSC sponsored Naval Reserve units and NCSORG units, and exercises general control over all programs relating to development of sealift readiness and strategic mobility; assists in developing and maintaining liaison with the maritime industry and management.
Area Commanders	COMSCPAC COMSCLANT COMSCEUR COMSCFE	Exercise control over area command activities and implement command policies and programs; employ command ships and industry provided service to fulfill Department of Defense sealift requirements and requirements for fleet and scientific support; provide for ship and equipment maintenance and repair services; determine personnel requirements and recruit, train, and manage work forces; prepare plans for emergency support of deployed forces; prepare budgets and meet other fiscal requirements, including exercise of control over

MILITARY SEALIFT COMMAND

FUNCTION	CODE	PRIMARY RESPONSIBILITIES
		expenditures; provide training for Naval Reservists; maintain liaison with industry; control cargo stowage in ships and conduct other operational matters. (NOTE: Only COMSCLANT and COMSCPAC operate MSC ships.) Area commanders represent command in establishing and maintaining contacts with shipper services, the maritime industry, MTMC, and other military commanders in their areas of operation. Area commanders report directly to COMSC.
MSC Subarea Commanders	COMSCMED COMSCSEA	Subarea commanders perform substantially the same functions as area commanders though on a more limited scale. Direct involvement in husbanding ships, assuring mail service, providing bunkers, etc., is great since subarea commands are primarily involved in operational support. They also maintain liaison with shipper services, maritime management and maritime labor within the jurisdictional areas. Subarea commanders report directly to their area commanders.
MSC Offices		MSC offices are representatives of the area commanders (and in some cases subarea commanders) and are directly involved in support and control of MSC operations in their respective geographical areas. In addition to handling administrative tasks, reserve training, liaison with shipper services, MTMC, and the maritime industry, office heads respond to requests for assistance from MSC controlled shipping—such as for repairs, mail, laundry, bunkering, handling of emergency leaves, securing crew replacements, checking stowage of cargo, diverting ships to meet unanticipated requirements, and other tasks that can best be performed on-the-spot. MSC office commanding officers report to respective area commanders and through subarea commanders, if so assigned.
MSC Units		Small MSC units generally are located where an office is not warranted, but where there is a need for fulltime MSC representation. They perform many of the duties normally performed by an office, but on a more limited scale. MSC unit heads maintain direct contact with MSC-controlled ships and with the shipper services, and report through the normal chain of command.
MSC Representatives		Cross service representatives are individuals appointed by MSC to represent the command. They generally deal with matters specifically assigned by MSC or those of an emergency nature; examples of the latter being repatriation of a ship's crewman, support of a ship, diversion of cargo, communications, clearance with customs or other local officials, and liaison with shipper services in the local area.

COMMAND HEADQUARTERS

(Special Staff Offices)

FUNCTION	CODE	PRIMARY RESPONSIBILITIES
Maritime Affairs Officer	M-00M	Incumbent reports directly to the Commander; this is a dual position with the incumbent serving both as a special advisor on sealift and maritime industry matters, and as the Director of Staff Services, M-02. As a special advisor, incumbent is responsible for maintaining liaison with maritime industry management and labor, liaison with the Maritime Administration, the Federal Maritime Commission, and other Federal agencies who have some relationship with ocean transportation, including committees of Congress. Incumbent keeps abreast of maritime policies, technology, financial concerns, trends in labor-management relations, and overall capability of private carriers, using knowledge gained and resulting familiarity with the maritime industry to advise COMSC concerning proposed or planned programs and policies or courses of action. Performance of these responsibilities requires continuing and close cooperation with the MSC headquarters and area commands staffs. With respect to functions as M-00M, incumbent reports directly to COMSC.
Assistant for Special Programs	M-00I	Assists in formulating, developing, and implementing plans, policies and programs in support of command management information efforts, carrying out special assignments and projects in this area under direction and guidance provided by COMSC. Serves as advisor to COMSC concerning methods and procedures for continuing evaluation of MSC activities, including command-wide programs, specific functions, or special projects. Identifies management areas that may require further analysis, and makes analyses as directed, providing reports and conclusions to COMSC as well as to appropriate command officials or offices. Reports directly to COMSC.
Equal Employment Opportunity	M-00E	Serves as an advisor to COMSC on matters pertaining to equal opportunity and affirmative action programs. Develops policies and makes recommendations for implementation of Federal, Department of Defense, and Department of Navy programs within the command and for implementation of programs required to resolve special command problems. Collects such data as is necessary, disseminates available materials and data command-wide, and prepares reports required by COMSC or by higher authority with regard to equal opportunity. Suggests and develops programs to provide for hearings, personal counseling, and processing of complaints by MSC employees, and

MILITARY SEALIFT COMMAND

FUNCTION	CODE	PRIMARY RESPONSIBILITIES
		serves as representative of COMSC in developing and maintaining liaison with EEO program officials in both private industry and the Federal Government. Reports directly to COMSC.
Legislative and Public Affairs	M-01D	Advises M-00 and M-01 on legislative matters; prepares responses to Congressional correspondence and positions on proposed legislation via coordination with the staff; conducts the command public affairs program, including media contacts, and supervises all audiovisual activities; i.e., photolab, graphics; maintains effective working relations with maritime industry, trade associations, maritime labor, and congressional offices. Reports directly to M-01, but keeps M-00 fully informed as to activities and/or problems within the scope of responsibilities.
Director of Operations	M-03	(See duties of Deputy Commander, Operations M-01.) As Director of Operations, maintains liaison with industry, coordinates with and directs operational functions and operational planning of subordinate MSC organizations; supervises headquarters staff functions that are part of the command operations. Is responsible for operation of the Naval Fleet Auxiliary Force, scientific support ship operations, dry cargo fleet and tankers, as well as pre-positioned ships. Is also responsible for development of plans, programs, and the capability required to deploy and logistically support elements of the Armed Forces, including the Rapid Deployment Force and other Army, Navy, Marine Corps, and Air Force units; and for providing peacetime ocean transportation for such units. Also responsible for engineering, supply, medical, and communications support of MSC ships; and for the development and coordination of MSC plans in support of contingency, emergency, or general war plans of Department of Defense units. Supervises training and administrative functions of MSC-sponsored Naval Reserve units and the CNO sponsored NCSORG and OCA units for which COMSC has administrative control responsibilities as a collateral duty.
ACOS, Fleet Operations	M-3F	Directs all aspects of programs relating to mobile logistic support of the U.S. and Allied fleet operating forces; coordinates activities of Naval Fleet Auxiliary Forces worldwide; develops policies governing use of other types of ships for fleet support purposes; advises M-01 and fleet officials regarding acquisitions of auxiliary type ships and features to be incorporated in such ships; represents the command at high level meetings concerning fleet support operations; provides similar support and direction with regard to

FUNCTION	CODE	PRIMARY RESPONSIBILITIES
		acquisition, use, and evaluation of scientific support ships; has overall staff responsibility for development of techniques, procedures, equipment support systems, special programs, et al, concerning operations in support of Navy and allied fleets, and the implementation of MSC scientific support missions.
ACOS, Readiness	M-3R	Develops the policies, programs, and overall capability required to assure strategic mobility for over-the-ocean deployment of U.S. Armed Forces under JCS-approved emergency, contingency, or general war plans. Specific responsibilities include supervision of the MSC command and control system, including ship-to-ship and ship-to-shore communications; development of individual and unit capabilities of MSC-sponsored and CNO-sponsored Naval Reserve organizations (MSC, NCSORG, and OCA); development and implementation of command plans in support of mobility plans by the military services and JCS; and for the acquisition of sealift readiness assets; and the initiation, completion, and reporting on analyses of sealift readiness capabilities and plans. Helps formulate plans for and assures MSC and industry involvement in joint tests and exercises of sealift capability and ship support systems, and maintains continuing liaison with the maritime industry to exploit the expertise and capabilities of that industry in the interest of national security.
ACOS Transporation	M-3T	Advises on matters pertaining to ocean transportation; directs operations of MSC-controlled dry cargo ships and tankers; determines requirements for such ships or transportation service to fulfill requirements levied on the command; establishes operational readiness requirements for MSC dry cargo ships and tankers; evaluates capability and effectiveness of the MSC fleet; establishes material standards and personnel requirements for operational readiness; establishes requirements for chartering of additional ships or procuring shipping services; supervises implementation of environmental programs; coordinates programs related to transportation operations, for example, developing billing rates or contracting for shipping services.
ACOS, Engineering	M-4E	Advises concerning ship readiness and assures material readiness of MSC nucleus fleet ships; reviews technical aspects of new ship construction; directs command activities in areas such as maintenance and repair of ships; alteration or conversion of ships, salvage operations, and ship operating techniques; administers command material improvement programs; promulgates command-wide policies concerning repair and maintenance activities; prepares the

FUNCTION	CODE	PRIMARY RESPONSIBILITIES
		annual budget for ship maintenance and repair; reviews engineering performance of MSC ships; maintains liaison with other technical agencies and industry; develops special programs to improve engineering efficiency and general operations of MSC ships.
ACOS, Medical	M-4M	Advises on medical support matters; coordinates command medical programs with appropriate authorities including BUMED and Public Health Service; develops or reviews programs concerning occupational safety and environmental protection; develops medical allowances for ships and ashore organizations; develops and publishes medical directives and instructions; investigates and takes action on matters affecting health or safety of MSC ships, crewmen, and ashore employees.
ACOS, Supply	M-4S	Ensures availability of supplies, equipment, and logistic support to MSC ships; manages inventory of special material; develops policy and disseminates instructions command-wide concerning supply and logistics support; establishes procedures and policies for shipboard use in maintaining stocks; obtains special items or equipment from Navy or industrial sources when needed to support MSC ship operations; prepares specifications and coordinates with contracting for procurement of such equipment or supplies; ensures maintenance of responsive food service programs aboard MSC ships; establishes and monitors fulfillment of shipboard allowance lists; administers Navy exchange, welfare, and recreation programs ashore and afloat throughout MSC.
ACOS, Strategic	M-6	Develops, coordinates, and disseminates plans in support of sealift missions and emergency, contingency, and general war plans approved by JCS and the military services; provides direction and guidance to MSC area commanders in the planning area; coordinates plans development with staff officers; maintains liaison with JCS in support of strategic mobility needs; monitors development of an effective Sealift Readiness Program; maintains coordination with the Planning Board for ocean shipping; and maintains direct liaison and coordination in all matters concerning development of strategic mobility capability, plans, or related documents.
Director of Staff Services	M-02	(See duties of M-00M.) Incumbent, in addition to serving as special advisor to COMSC on maritime affairs and MSC relationships with the industries, Federal agencies, and the Congress, directs the activities of command headquarters staff offices providing services and/or support to the operational staff. Responsibilities include the development of

FUNCTION	CODE	PRIMARY RESPONSIBILITIES
		command manpower requirements and securing approval for manpower authorizations, control of mail and records, and general administration of the command worldwide; the recruiting, training, and retention of both ashore personnel and civilian mariners to fill oceangoing billets; financial management of the command, including appropriated and Navy Industrial Fund activities, billing for services rendered by the command, and reimbursement of private carriers providing ships or services to the command. Other responsibilities include administrative direction of activities of the Office of the Counsel (who also maintains direct coordination with and serves as an advisor to COMSC, the Deputy Commander, and ACOSs); the supervision of command data collection, storage, and retrieval programs; and monitoring the acquisition of ships, shipping services, nontransportation assets or services, shipbuilding and ship repair services, and other goods or services acquired through awards to or contracts with private industry. Serves as direct representative of COMSC in coordination with and control of parallel functions in MSC area commands and their subordinate units, and in continuing liaison with the Department of the Navy, Army, Air Force, and with the Marine Corps.
ACOS, Administration and Manpower	M-1	Directs military personnel activities; determines, allocates, and controls required military and civilian personnel allowances; maintains liaison with other departments of DOD; advises M-02 on administrative and management matters; provides office facilities and services to headquarters staff; directs command inspection programs; monitors publication and distribution of command directives and publications; and serves as central point for coordination of all organizational matters.
ACOS, Civilian Personnel	M-2	Develops policies and procedures for recruitment, training, and retention of civilian personnel worldwide; advises M-00 and M-01 on personnel matters; coordinates personnel policies and programs with appropriate higher authorities; supervises special programs such as occupational safety and health; develops wage scales and work rules for commandwide implementation for mariners.
ACOS, Comptroller	M-5	Ensures performance of budget, accounting, statistics and analyses, disbursing, internal management controls, and other financial management functions; advises the MSC Commander concerning such matters; maintains liaison with Navy and the Department of Defense financial management offices; coordinates comptroller functions with area commands; develops command budgets annually; establishes billing rates; collects money due the MSC.

FUNCTION	CODE	PRIMARY RESPONSIBILITIES
Counsel	M-7	Advises COMSC on all matters of law and furnishes legal advice and support to COMSC and staff offices; establishes the legal policies of MSC, and reviews legal actions taken; collaborates on matters under JAG cognizance; collaborates with legal offices of Army and Department of Justice on matters of interest to MSC; collaborates with Navy Department General Counsel and other Navy legal officers on MSC matters; manages all aspects of P&I claims, including initiating claims handling procedures, collecting claims data, investigating and reviewing claims, providing technical approval for such claims. Counsel also is directly responsible for keeping Navy General Counsel informed on all matters of Navy interest in which the command is involved.
ACOS, Command Information	M-8	Analyzes requirements and develops, implements, coordinates and administers effective command-wide information systems; provides supporting ADP systems; interfaces with DOD, JCS, WWMCCS project management, OPNAV and other Navy agencies with regard to information processing requirements and policies; assists area commands in identifying and satisfying their information needs.
ACOS, Contracting	M-10	Negotiates and executes contracts with maritime industry or other organizations to procure ships, shipping services, ship equipment, ship repair services or other services or items needed for support of MSC missions; maintains expertise in maritime industry market conditions; maintains coordination with the maritime industry; participates in the preparation of MSC plans; reviews MSC policies with regard to procurement on a continuing basis to assure conformity to DOD policy; provides reports and advises the commander and staff on matters concerning procurement matters or settlements of claims.

SUMMARY

MSC missions include not only peacetime support of the Armed Forces by delivery of dry cargo and petroleum products, and operation of fleet support and scientific support ships, but also development of procedures and overall capability to perform those functions in an emergency.

The MSC organization is structured to support worldwide operations in both peacetime and in an emergency. The organization can be expanded by recruitment of professional mariners and support personnel from the maritime work force, and by activating reserve units that could as much as double current MSC strength. NCSORG units could be activated to provide the Navy with skilled manpower needed to control shipping activities in an emergency or contingency. The MSC organization is dynamic in that offices and other subelements routinely are activated or disestablished to meet current command commitments.

In addition to operating as a Navy fleet, MSC is responsible for direct liaison with the maritime industry—a function it is in an advantageous position to perform since more than 85 percent of the $1 billion plus annual expenditures by the command flow directly to private industry.

MSC is both a procurement agency—securing ships, shipping services, and shipping systems from the maritime industry—and a ship operating command. Unlike other Navy fleets, MSC relies heavily on private industry for the repair and modification of its ships. It also relies on the civilian work force as a primary source of skilled people for manning its ships. Although MSC civil service mariners are Government employees, their pay scales and work rules are based on those prevailing in private industry.

To strengthen its relationships with the industry which provides much of MSC capability in peacetime and in emergencies, MSC provides for participation of industry representatives in joint planning and joint exercises to thus strengthen day-to-day working relationships the Navy enjoys with private industry. Attention also is given to the continuing development of a management information system that will provide valid information concerning the cost, effectiveness, and efficiency of command operations; allowing the full weight of MSC managerial expertise to be brought to bear on challenges the command faces.

While it cannot be said that MSC is, in effect, a commercial shipping line, neither is MSC a purely military organization. MSC is unique. The command operates in two arenas—the commercial shipping community and military transportation. It draws resources from both industry and the Government. Its personnel must be familiar with military requirements and industry-provided capabilities, and capable of fulfilling diverse MSC missions that pose great demands on both the organization and those who serve it.

CHAPTER 4

U.S. MARITIME INDUSTRY

The maritime industry is small, but it exercises a disproportionate power in the nation's legislative halls and the shaping of its national security and economic policies. It may well be the least visible and most misunderstood of major U.S. industries.

There is limited public awareness within the United States of the roles or the composition of the maritime industry. Best known among its diverse elements are the ocean carriers, the owners and operators of ships that carry U.S. commerce over the world's oceans. Less recognized are the carriers and ships that transport cargo, primarily bulk cargo, within the Great Lakes system or the operators of barges that traverse the inland waterways. All are part of the maritime industry.

The U.S. rail and trucking industries are related "by marriage." Ocean cargo moves over land from field and factory to a port for loading on a ship or from port to port for transshipment. Cargo from Europe or the U.S. East Coast, for example, may move by rail to the West Coast for reloading aboard a ship and delivery to the Far East. Known as land-bridge movements, among other terms, such intermodal shipments (figure 4-1) may see loaded truck trailers carried piggyback aboard flatbed rail cars with other cargo in tanks or boxcars.

The U.S. fishing fleet is a part of the nation's maritime industry as are tug operators involved in towing or salvage operations. Suppliers of parts for old (even World War II vintage) ships are key elements of today's industry. So, too, are the manufacturers who turn out complex space age navigation, communication, propulsion, and other systems and equipment. These systems and equipment are installed in huge, specialized, and generally costly oceangoing ships, many of them integral elements of an almost worldwide intermodal distribution system consisting of air, land, and sea modes of transport.

There are more than 20 U.S. maritime unions, many representing other than maritime workers. However, only nine unions cover the bulk of the 50,000 mariners in the deep-sea segment of the industry work force.

Primary elements of the U.S. maritime industry account for about 175,000 jobs. About 25,000 shipboard billets are in the deep-sea segment of the industry, another 46,000 billets for longshoremen who handle ship loading and unloading and stuffing and unstuffing of containers in the port areas. Nearly 100,000 billets account for production workers in U.S. shipyards. The remaining 4,000 billets are for those who crew or support Great Lakes shipping. Even when jobs in related industries, such as rail and trucking, fishing, and offshore oil or salvage operations are added in, the industry is relatively small in the number of people it employs. Ocean carriers are limited in number. For example, U.S. flag ships carry less than 5 percent of the U.S. import-export trade. U.S. shipyards get little foreign business.

However, the influence of the U.S. maritime industry far exceeds its size. It has a direct and significant impact on national security, both military and economic. Capability of the industry limits or extends options available to U.S. decision makers concerning foreign policy, support of collective security agreements, or reaction to military threat. Delivery of strategic materials needed by U.S. businesses, trade balances with foreign nations, and the ability of the United States to project its economic or military power worldwide all are directly affected by the capability of the private sector maritime industry.

As indicated in chapter 1, industry strength, particularly that of the merchant fleet and the

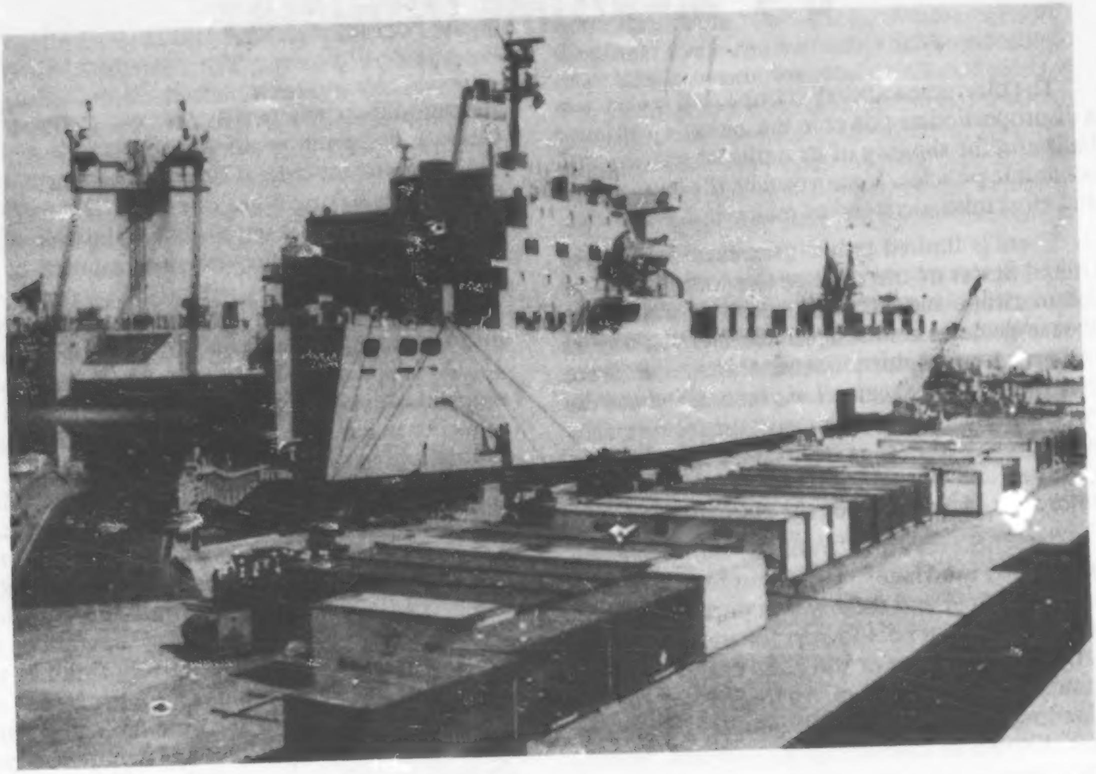

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Figure 4-1.—Intermodal shipments from piggyback trucks.

shipyards, often has been allowed to wane in periods between major conflicts. Repeatedly, the nation has had to initiate a major shipbuilding program to support deployment of its military forces and assure its own security. But the decline of the U.S. merchant fleet in the 1960s and 1970s was not unique. About 95 percent of the trade that crosses national frontiers moves by water, and that trade has expanded tremendously. Despite such growth, the percentage of their own trade carried in their own ships by Western European nations and the United States dropped from 85 percent in 1939 to 40 percent in 1980. The United States was at the low end of the scale with its 5 percent share.

To some extent, the overall decline on the part of Western World and U.S. fleets resulted from development of Third World merchant fleets. The substantial growth of the Soviet merchant fleet was another factor. In 1981 it ranked sixth among world merchant fleets, ahead of the United States. Another factor has been Western World industry's emphasis on manufacturing and production of high-value products. Such a technological focus has tended to make western nations more dependent on the import of raw materials, agricultural products, and lower value manufactured goods. That dependency has both military and economic implications. A continuing flow of imports is needed to sustain the economie of western nations. Also, long over-ocean suppl lines must be protected in any major conflict.

In the 1960s and 1970s, the question o whether or not the United States even needed merchant fleet occasionally was raised. Those wh voiced it usually had a ready answer. Some sai the United States did not need an expensiv merchant fleet since more than 20,000 mercha ships were sailing the seas. These, they said, carried most of the U.S. trade anyway and would continue to do so in an emergency. Opponents claimed that U.S. history and prestige demanded that the nation continue to be a strong maritime power. They deemed this power necessary to assure the economic security of what has become an "island nation," one dependent on the sea lanes for import of materials and the distribution of its products.

The economic necessity for a U.S. merchant fleet probably cannot be proved to those who doubt its validity. Nevertheless, no serious attempt has ever been made to deny the merchant marine Federal support. There is general agreement that the United States must have a strong and reliable maritime industry if it is to exert its influence and project its power in support of its own security, and to carry out the policies it espouses as a leader among free nations of the world.

No matter how strong the nation's airlift capacity or how fast the development of cargo-carrying spacecraft, 90 to 95 percent of the tremendous volume of supplies, equipment, and material needed to logistically support military forces deployed overseas will continue to be shipped by sea. Ships are the only vehicle capable of transporting the volume required.

Can the U.S. merchant fleet and the overall maritime industry provide the capability needed to augment limited MSC resources? There is no clear answer to that question, just as there is no common perception of what the role of private sector industry should be or to what extent it should be supported by the Federal Government. Chapter 5, which covers maritime legislation, illustrates the historical ambivalence of U.S. maritime policy. Purpose and policies often have been in conflict. It became clear once again, however, in the early 1980s that the private sector maritime industry is the primary source of resources available to the Department of Defense for sealift augmentation and logistical support of its military forces in any major emergency.

The maritime industry is as complex as it is small. Varied segments compete with one another. Sometimes a solution to a problem for one is very apt to create a new problem for another. It is undeniable that ships, policies, and practices designed to generate profits in the economic marketplace may be adverse to military requirements. In assessing the capability of the U.S. maritime industry, one must do so in comparison to, and in relationship to, the capabilities of other nations since all compete in a single world arena—the oceans.

WORLD STANDING OF THE MARITIME INDUSTRY

In view of industry complexity, this chapter will not attempt to deal with the subject and its many components in great detail. Instead, emphasis is placed on the shipping industry and its relationships to MSC. Those seeking a broader understanding are encouraged to read other available publications. One of the best is *The Business of Shipping*, a book authored by Lane Kendall, a former MSC shipping advisor and well-known shipping authority. It is available from Cornell Maritime Press, Inc., Cambridge, Md. 21613. Another work of interest focuses on Federal aid to the industry. Authored by Gerald R. Jantscher, *Bread Upon the Waters, Federal Aids to the Maritime Industries*, is available from the Brookings Institution, 1775 Massachusetts Avenue N.W., Washington, D.C. 20036. A global focus is provided by *Shipping—How It Works*. Its authors are Thorsten Rinman and Rigmor Linden. The book is available from Elanders Boktryckeri AB, Kungsbacka, Sweden. The last of the four recommended works is *The Defense Transportation System, Competitor or Complement to the Private Sector*. Its author is Clinton H. Whitehurst, Jr., and his book is available from the American Institute for Public Policy Research, Washington, D.C.

While ship numbers change monthly, the total number of U.S. flag, merchant-type ships available in 1981 was 864. That included 578 privately owned vessels and 286 that were Government-owned. Of the 286 Government-owned ships, 254 were in mothballs at three National Defense Reserve Fleet anchorages. The remaining 32 were being used by MSC, by state and Federal maritime academies, and private steamship companies under agreements with the Maritime Administration, Department of Transportation.

At the beginning of 1976, 5 years earlier, U.S. merchant ships had totaled 857. At the beginning of 1971, the total was 1,579. The sharp drop in numbers is not as bad as it appears since in the same period of time deadweight tonnage of the privately owned fleet increased from 14.4 million to 21.2 million tons. That is a reflection of a trend in the 1960s, 70s, and 80s toward construction of large, specialized ships. One example is the container ships. Each is from six to seven times more productive than breakbulk ships they replaced. (A breakbulk ship is defined later in this chapter.)

But there was another trend. The availability of Government-owned ships also was reduced from 786 ships and 6.9 million tons at the beginning of 1971 to 286 ships and 3 million tons by 1981. Many Government-owned assets were scrapped, primarily because of age. A result is increased reliance by the Department of Defense on the private industry for logistical support.

In 1981 the privately owned U.S. merchant fleet consisted of 263 freighters, 288 tankers, 20 bulk carriers, and 7 ships that could carry both passengers and cargo. The number of freighters dropped significantly between 1971 and 1981, dropping from 474 to 263, while tankers increased from 262 to 288. However, decline in freighter numbers was countered by an increase in productivity of converted or newly constructed container ships, roll-on/roll-off carriers (RO/ROs)(figure 4-2), and barge carriers. Of 153 intermodal ships in the U.S. inventory at the start of 1981, 113 were container ships, 17 barge carriers, and 23 RO/ROs. Ten years earlier there had been 86 container ships, 1 barge carrier, and only 4 RO/ROs.

Specialization designed to increase productivity is evident in other ship designs. In 1981 tug and barge combinations were listed in the freighter

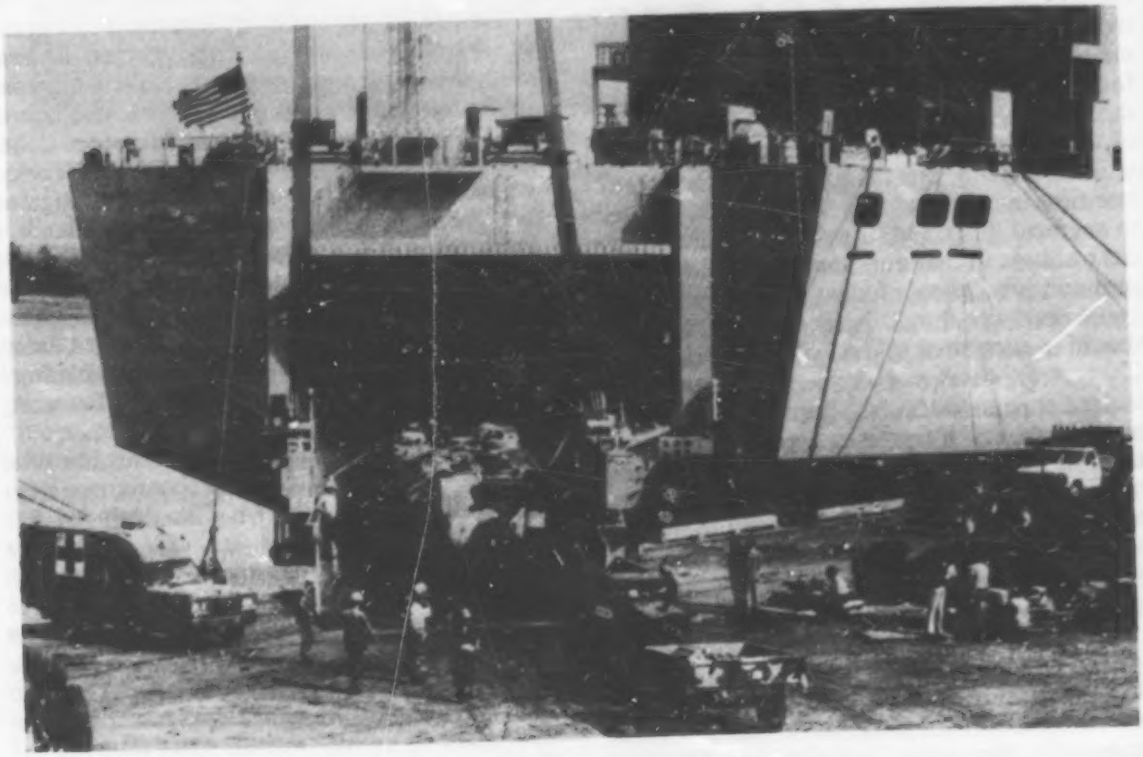

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Figure 4-2.—Roll-on/roll-off carriers (RO/RO).

category with tanker listings including several ships specifically designed as asphalt carriers, 13 liquefied natural gas carriers (ships carrying natural gas frozen to the point where it becomes a liquid), 7 chemical tankers, 5 sulphur tankers, and other special types.

To better understand the situation that prevailed at the beginning of the decade, some knowledge of worldwide industry trends is helpful. During the 1970s, worldwide deadweight tonnage totals of shipping increased about 10 percent annually. However, few orders for new ships were placed after the mid-1970s since tonnage available was more than enough to fulfill cargo carriage requirements. A result was that shipbuilding was in serious trouble worldwide, particularly in the United States. By the early 1980s, lacking orders, many American yards were curtailing work forces. Some had closed, others appeared likely to do so. Ships that were being built were specialized carriers, built primarily in cheaper foreign yards such as those in Japan and in Soviet Bloc nations, as the USSR continued to expand its merchant fleet.

Near the end of the 1970s, according to Rinman and Linden, authors of *Shipping—How It Works*, with more than 630,000 deadweight tons of shipping in operation worldwide, half of the total was made up of tankers. Forty percent of the tankers sailing the world's seas were owned by oil companies and the remaining 60 percent by independent shipping companies. Bulk carriers, which transport mainly raw materials and agricultural products, accounted for 20 percent of world tonnage. Combination carriers that move both oil and bulk products represented another 8 percent. Ships involved in liner operations, many of them intermodal carriers, accounted for 10 percent of the total world tonnage. Another 10 percent consisted of breakbulk ships, those with holds and internal cargo decks. The remainder, about 2 percent of the total, consisted of ships built for specific purposes.

Forty percent of world shipping, according to Rinman and Linden, operated under tax-free flags, 10 percent under Scandinavian flags, and 10 percent Japanese flags. Owners of ships registered and sailing under flags of foreign nations to take advantage of tax breaks were primarily Greek, Japanese, Chinese, and American.

From the mid-1960s to the late 1970s, the share of Third World nations remained at about 6 percent, or 40 million deadweight tons. Third World ships, however, are about half the size of the worldwide average.

MERCHANT SHIPS

Despite a decline in ship numbers from the immediate post-World War II era when the United States owned half or more of world merchant ships, productivity of the U.S. merchant fleet increased significantly in the 1960s and 1970s. It resulted primarily from the United States development of container ships and barge carriers. Nevertheless, the United States then had only 3 percent of the world's merchant ship tonnage.

BREAKBULK SHIPS

Approximately 50 traditional-type breakbulk ships were active with another 160 in the National Defense Reserve Fleet. Most of the latter were built for World War II.

Americans generally have a good idea of what a breakbulk ship is although the term may not be familiar. Breakbulk ships have deep holds that are loaded through hatches. The holds have several decks between the hull of the ship and the top deck, and breakbulkers often are referred to as "'tween deck ships." Most active breakbulk vessels are self-sustaining, being equipped with cranes or booms for handling cargo, a task performed by longshoremen. Some of the cargo-handling gear installed on breakbulk ships can lift as much as 100 tons, although 50- to 75-ton booms are more common. Crew sizes range from 35 to 55 depending on the size and configuration of the ship.

Cargo capacity of an average breakbulk ship is 600,000 bale cubic feet, and average speed is just under 19 knots. Their payload, however, is generally listed in deadweight tons (DWT). DWT is the amount of cargo a ship can carry at its design draft. Thus, a ship with a 32-foot draft would be that deep in the water when fully loaded. Most are steam propelled and, since few have been built in recent years, few, if any, can reach 20 knot-plus speeds. Average age of the 50 active breakbulk ships in the U.S. merchant fleet in 1981 was 17 years.

Advantages of the breakbulk ship are its self-sustainability and its ability to carry almost any type of dry cargo—cargo that can be stacked or stowed to take maximum advantage of space available. Breakbulk ships also offer flexibility. They can handle containers on deck or in cells installed below decks. Some carry as many as 200 twenty-foot containers, or their equivalent, below deck. These advantages are particularly desirable to the military for both peacetime logistical support of troops and in emergencies where sophisticated port and cargo-handling systems are lacking.

Among the breakbulk ships that were active in the early 1980s, eight were of the Challenger class, most under MSC charter. They are 561 feet long, with a 75-foot beam and 32-foot design draft. Each is about 13,600 DWT. Slightly smaller, at about 12,400 DWT, are ships of the Colorado, American Mail, and Pride classes; the latter upgraded to serve as partial container ships.

A group of breakbulk ships ranging in length from 495 to 565 feet and from 70 to 75 feet in breadth, with design drafts of about 32 feet, are the California class (4 ships), the Amelia Lykes class (13 ships), the Louise Lykes class (12 ships) and the American Racer class (3 ships). They range from 11,400 to 14,700 DWT.

Two heavy lift breakbulk ships of about 11,500 DWT, with a length of 523 feet and a 32-foot draft, were listed in the Transcolorado class. Two ships of the Jeff Davis class were operating in 1981, 565 feet long and 13,800 DWT, along with three small American class breakbulkers. They were only 2,200 DWT with a length of 295 feet and drawing only 15 feet of water when loaded.

Crew sizes of breakbulk ships vary with the type of ship, but most require about 45 crewmembers. This is a larger crew than is needed for container ships or barge carriers, or even modern tankers.

As can be seen, while generally comparable, most of the 50 breakbulk ships operating in the early 1980s were of different designs and differing sizes. Many already were under MSC control as part of its chartered fleet, primarily because they are efficient and economical carriers in peacetime. They can be diverted from port to port to pick up cargo until space is fully utilized. These ships are versatile carriers in emergency situations when ashore support facilities are limited. However, because their productivity is limited by size, their relatively slow speeds and the long time required for in-port turnaround, they are not high revenue producers in the commercial market. The result is that their numbers will continue to decline.

Growth of intermodalism is a primary reason. Prior to development of the container ship, oceanborne commerce was limited essentially to two types of carriers: the bulk vessel designed to haul grain, ore, and liquids, including petroleum products; and the breakbulk ship.

CONTAINER SHIPS

The container ship differs because it has cells installed that hold containers of specific sizes, the most common being 20 and 40 feet. Some carriers operate ships equipped to carry other sizes, such as 24-, 27-, or 35-foot boxes. Industry is gradually standardizing to 20- and 40-foot lengths. With slight modifications, shipboard cells for 40-foot boxes can handle two 20-footers.

Ship container capacities often are listed in TEU 20-foot equivalents, or FEU 40-foot equivalents. That makes it possible to assess relative capacities of various types of ships, a capability advantageous to the military planner.

Most containers are open at one end and the cargo can be pushed, pulled, or even driven in. A few containers have top openings, however, and the military has been testing side-opening boxes for the movement of ammunition. A number of special types of containers also exist including flat racks and gondolas. A flat rack is, in effect, the bottom of a box. A gondola is much the same type except that it has posts at one or both ends to allow easier stacking of loose cargo. Other special types of boxes are for dry or liquid bulk cargo, generally in some type of liner or bladder that fits into a container. Perishable items are moved in refrigerated containers.

Containers are versatile because they can be transported in container ships, on the deck, or in holds of breakbulk ships, in barges, or aboard roll-on/roll-off ships. They can be moved over land by truck or rail and even lifted in aircraft (figure 4-3). A typical container movement, however, begins with the container positioned by the carrier at the door of the shipper to be loaded or stuffed.

Loaded and sealed, the container is moved by truck or rail to an ocean terminal—a terminal operated or used by the carrier positioning the box. Driven dockside, the container is lifted from its chassis by a gantry crane that reaches out over the container ship and positions it in the shaft-like steel cell. Loaded above and below decks with containers, the ship heads for its destination where the loading process will be reversed. Moving by truck, barge, rail, or even aircraft in some instances, the container and its cargo wind up at the very door of the consignee. Throughout this shipping process, actual cargo handling is very limited. Loss by theft or damage is minimal. Transit time is less than for cargo carried in more traditional ships. The bottom line is that the cost per-ton-mile of cargo movement is cheaper than for traditional ships. Most container ships require about 25 crewmembers, although some need even fewer.

Development of an intermodal distribution system demands a substantial capital investment. Container ships easily can cost $100 million. Terminals equipped with giant gantry cranes that can handle boxes swiftly and safely are needed. Adjacent to the terminals, or in port areas where terminals are operated by another agency, are container marshalling yards. Not all containers can move directly from factory to a ship. While waiting for a ship or truck, the containers must be stacked, kept track of, and protected. Specially designed cargo-handling gear is used. Some lift boxes much like a forklift, and others straddle boxes and lift them from the top. All are expensive, as are computer systems required to document traffic and manage the worldwide flow of containerized cargo.

To paraphrase Marshall McCluhan, who said that because of technological advancements in communication the "medium is the message," in the field of ocean transportation, the container has become the cargo.

In 1977 U.S. flag ocean carriers owned nearly 192,000 containers, a third of the

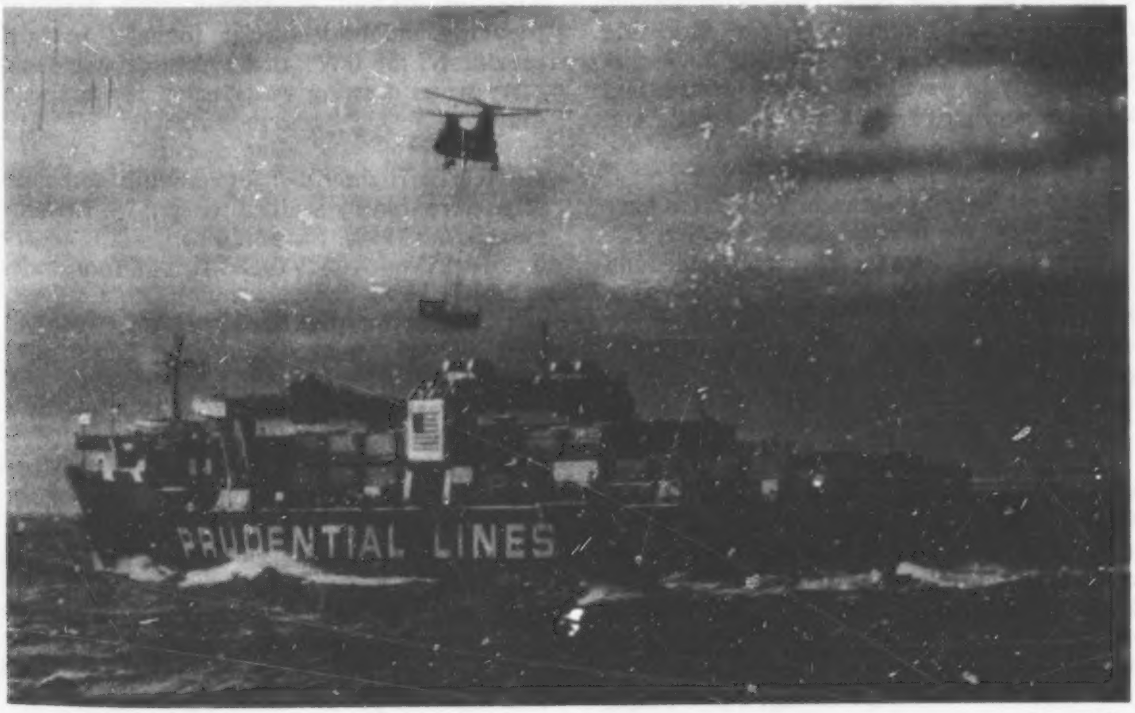

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Figure 4-3.—A container ship with cargo being removed and placed on a barge.

worldwide total. More than 375,000 were owned by companies that leased them to the carriers or shippers. By 1980 carriers owned only 18 percent of the more than 1 million boxes in the U.S. inventory. Among larger companies leasing containers were Container Transport International (238,000 boxes), Transamerica, ICS, Inc. (155,000), UniFlex Container (154,000) and Itel Container International (138,000). Together, leasing companies accounted for more than 850,000 of the million-plus containers in the U.S. industry inventory.

As in other U.S. industries, ocean carrier management relies heavily on leased assets including ships, containers, trucks, tractor trailers, computer systems, and cargo-handling equipment. But the ship remains the central element of the intermodal system.

Container ships are sophisticated, large, fast, productive ships designed specifically to move cargo at a competitive cost and, thus, make a profit. Ninety-six of the 113 active at the turn of the decade were pure, non-self-sustaining container ships, depending on shoreside cargo-handling gear for loading and discharge. Only 13 were self-sustaining ships, and two were configured to carry automobiles and containers.

All U.S. flag ships built in U.S. yards have a Maritime Administration design number. The codes used are somewhat difficult to understand for the uninitiated. A table is really necessary to decipher the designations given to these ships. For example, the eight American Leader class container ships are given the design designation C-6S1W.

A design designator includes three groups of numbers, the first of which designates the type of ship. Thus, "C" identifies a cargo ship, "T" a tanker, "G" a ship built for Great Lakes trade, and so on. The second group of numbers in a design designation indicates the length of a ship and number of passengers it can carry. A table for cargo ships begins at 400 to 450 feet, and goes up in increments of 50 feet. Thus, a C-1 would be from 400 to 450 feet, a C-5 from 600 to 650 feet.

The third group of numbers in a design designation identifies the type of propulsion (i.e., "S" for steam), the number of screws, and other characteristics. A C-6S is a single-screw, steam-driven cargo ship carrying fewer than 12 passengers—all characteristics listed in Maritime Administration tables under S. The last group of numbers is most confusing to the layman. It is sufficient to say, without going into detail, that codes used indicate the chronological order (generally) of a particular ship design and the chronological order (generally) of modifications to that design. U.S. ships built in foreign yards do not have U.S. design numbers. Thus, a class of ships built in foreign yards of 600-foot-length and diesel-propelled is simply listed as D-6, with a notation that the ships are foreign-built.

Table 4-1 lists the types of container ships operating in the U.S. foreign trade at the beginning of the decade. Information provided gives some idea of their size and container-carrying capacity in terms of TEU or 20-foot equivalents, the draft of each ship, and the deadweight tonnage. As noted previously, the DWT is the payload a ship can carry when drawing water equal to its design draft.

NOTE: Eight SL-7 foreign-built container ships were sold by Sealand to the U.S. Government in the 1980s. Each ship had a TEU capacity of 1,958 with 28,300 DWT, a 35-foot draft, a 106-foot beam, and an overall length of 946 feet, and was able to sustain 30-knot speeds. There was a total of 54 partial container ships in the active U.S. inventory in the 1980s. These ships could handle breakbulk cargo and were equipped with below-deck container cells to carry from 128 to 521 TEUs. The ships averaged about 745,000 bale cube in capacity, and their average speed was in the 19-knot range. For the military, such ships combine the advantages of container and breakbulk delivery systems, and have both peacetime and emergency potential for troop support. Many are self-sustaining, a key characteristic insofar as the military is concerned. Partial container ships in commercial service are particularly valuable as feeder ships, picking up containers at major ports and delivering them to

Table 4-1.—Container Ships Active in the 1980s

No. of Ships	Class	Design No.	Capacity in TEU	Draft	Beam	DWT
8	American Leader	C-6S1W	1,009	32′	76′	15,550
7	American Lancer	C-7S68E/C/D	1,290 to 1,394	21′	90′	20,000 to 22,000
5	President Eisenhower (3 self-sustaining)	C-6S1X	839 to 1,012	32′	76′	20,000
4	President Taft	C-6S69C	1,094	31′	82′	17,500
4	President Grant (converted LASH design)	C-8S81E	1,936	35′	100′	29,800
6	President Jefferson	X-6S85B	1,481	33′	90′	20,700
4	C.V. Lightning	C-5S73B	1,070	32′	78′	16,300
4	Austral Entente	C-8385C/D	1,712	33′	90′	27,700
4	Matson Manukai	Private	1,395	34′	95′	27,700
4	Sealand Economy (2 foreign built 2 U.S.)	C-7388A	1,328	31′	95′	26,600
4	Sealand Leader (foreign built diesels)	D-6	1,100	27′	78′	16,200
12	Foreign built diesels	D-9	1,678	33′	101′	23,300
17	Converted T-1 T-2/w new forebodies	None	630 to 1,089	30′ to 31′	68′ to 88′	9,300 to 17,000

ports where service requirements are limited. See table 4-2 for a listing of partial container ships available in the early 1980s in the active fleet.

ROLL-ON/ROLL-OFF SHIPS

Another cargo ship developed in the 1960s and 1970s, with considerable contributions by Military Sealift Command in coordination with Sun Shipbuilding, is the roll-on/roll-off carrier. It has 'tween decks like a breakbulk ship, but all decks are connected by ramps. Vehicles can be driven, pushed, or towed aboard a RO/RO over stern ramps, ramps leading to side ports, or a combination of the two, then positioned on the desired deck.

Table 4-2.—Partial Container Ships

No. of Ships	Class	Design No.	Capacity in TEU	Draft	Beam	DWT
5	President Adams	C-5375A	490	35′	82′	22,200
7	Export Banner	C-3S46A/B	337 to 490	31′	73′	12,500
5	DelCampo	C-3C76A	246	31′	70′	13,000
3	Deloro	C-3543A	128	31′	70′	13,100
6	Santa Clara	C-4S65A	209	30′	82′	12,700
13	James Lykes	C-5S37E/F	120	32′	69′	14,300
4	MorMac Cargo	C-4S60A	200	31′	75′	12,800
4	MorMac Dawn	C-4S64A/B	166	32′	75′	13,300
2	MorMac Altair	C-6S60B	521	32′	75′	16,200
5	Colorado	C-4S69B	230	32′	82′	13,100

RO/ROs (figure 4-4) are flexible in that they can carry containers on deck or in cells, if installed, and can lift outsize or bulky cargo, including helicopters. They are generally faster than breakbulk ships, some able to sustain 25 knots. But, because cargo can't be stacked and space utilization with vehicles being loaded is not good, the ships are not highly competitive in commercial trade. An exception is when port facilities are limited, such as in developing countries, or in an emergency situation.

While the 1981 inventory of merchant fleet ships listed 22 RO/RO ships as being operated by private carriers, 5 of those were actually part of the MSC Controlled Fleet. MSC also operated two Government-owned RO/ROs. The complete listing follows in table 4-3.

Their flexibility, ability to carry vehicles, and independence of sophisticated port facilities make the RO/RO highly desirable for military use. This is evidenced by the fact that MSC has assigned several to its Near-Term Pre-Positioned Force in the Indian Ocean. These ships are loaded with equipment to be landed to support air-deployed troops of the Rapid Deployment Force.

Some of those ships (e.g., the Marine Class RO/RO) have built-in angled stern ramps. The RO/RO constructed (in 1981) by Sun Shipbuilding has ramps that can swing either way facilitating docking and discharge. Other RO/ROs require a dock able to accommodate a ramp and, of course, either pre-positioned or ship-carried ramps to facilitate loading and unloading. Crew sizes for most RO/ROs range from 30 to 35.

Two special types of RO/ROs are not included in Table 4-3. The *John Henry* and *Paul Bunyan* are operated by American Heavy Lift Shipping Company. These RO/ROs can carry heavy equipment such as generators, rail cars, and other items too bulky or heavy for most ships. Both are self-sustaining and have payloads of 2,900 DWT. They are, in essence, the only self-sustaining heavy-lift ships still operational under the U.S. flag. This obviously is a serious disadvantage if a major emergency were to occur that required U.S. deployment of major forces. Only

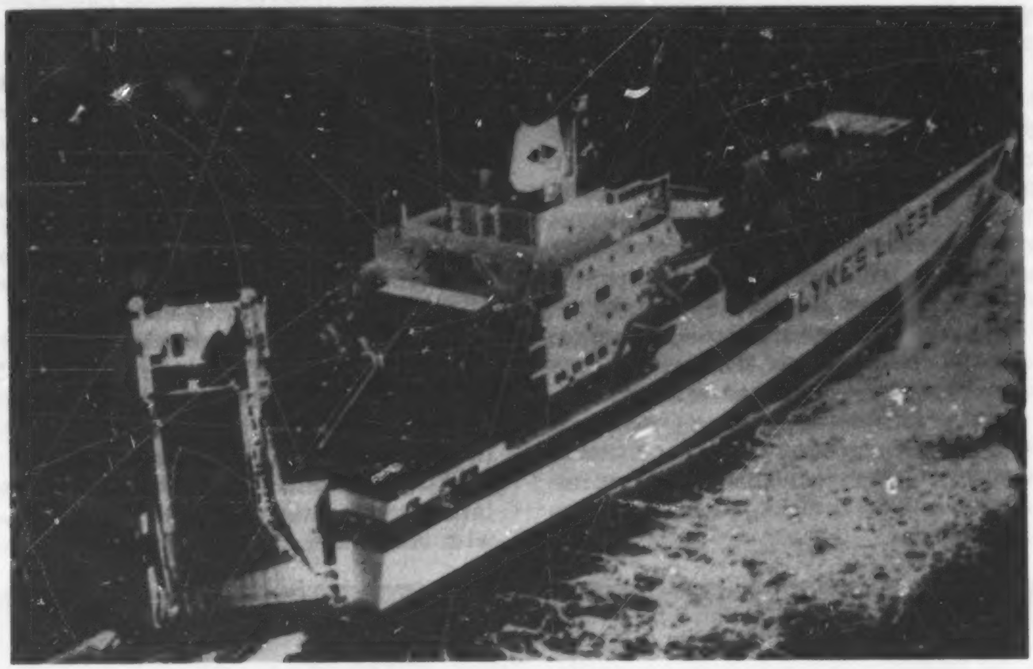

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Figure 4-4.—Lykes line RO/RO.

Table 4-3.—Roll-On/Roll-Off Ships

No. of Ships	Type	Length	Beam	Draft	DWT	Sq. Ft.	TEU
4	Seabridge (C-4S78A)	602′	90′	34′	16,700	34,000	834
4	Maine (C-8S95A) (MSC has two in Controlled Fleet)	685′	102′	32′	19,300	151,348	800
2	Hansa (MSC has both)	634′	89′	30′	15,200	113,000	---
2	Matson	700′	105′	28′	13,900	152,280	536
1	Waterman (under construction)	554′	71′	21′	9,000	49,920	---
4	Ponce Class	700′	93′	28′	14,500	152,280	(up to 453 trailers)
4	Sun Jumbos	791′	105′	28′	17,900	199,800	550
1	Callaghan (MSC Controlled Fleet)	694′	92′	29′	13,500	167,537	(up to 160 M-60 tanks)

a very few heavy-lift ships of World War II vintage are available in the reserve fleet to supplement them.

In assessing possible growth in numbers of either RO/ROs or barge carriers (ship types particularly suitable for military support purposes), it appears that economic factors are unlikely to spark new construction. It is more likely that those operating will be either made available to MSC, as some already have been, or put in the reserve fleet. They simply are not competitive with container ships in normal peacetime trade operations. That does not mean, however, that there may not be routes where barge carriers can be competitive, especially those that link up with river systems that allow unique advantages of barge carriers to be exploited. RO/ROs are advantageous for commercial service to areas lacking developed ports and port facilities.

BARGE CARRIERS

Like RO/ROs, barge carriers represent an improvement on the basic breakbulk ship design. They came into the U.S. merchant fleet in the 1960s and 70s. There are two basic types, the LASH or lighter-aboard-ship, and the Seabee, or Seabarge. Both of the latter two names are used to describe three ships owned and operated by Lykes Brothers Steamship Company. The Seabee (C-8S82A), figure 4-5, is a 39,400 DWT ship capable of carrying 38 barges or lighters (the terms are synonymous). Each barge is 97-1/2 feet by 35 feet by 16-3/4 feet with a cargo capacity of 39,142 cubic feet.

Barges for either a Seabee or LASH can be loaded at an inland point with breakbulk cargo, with containers, vehicles or almost any other

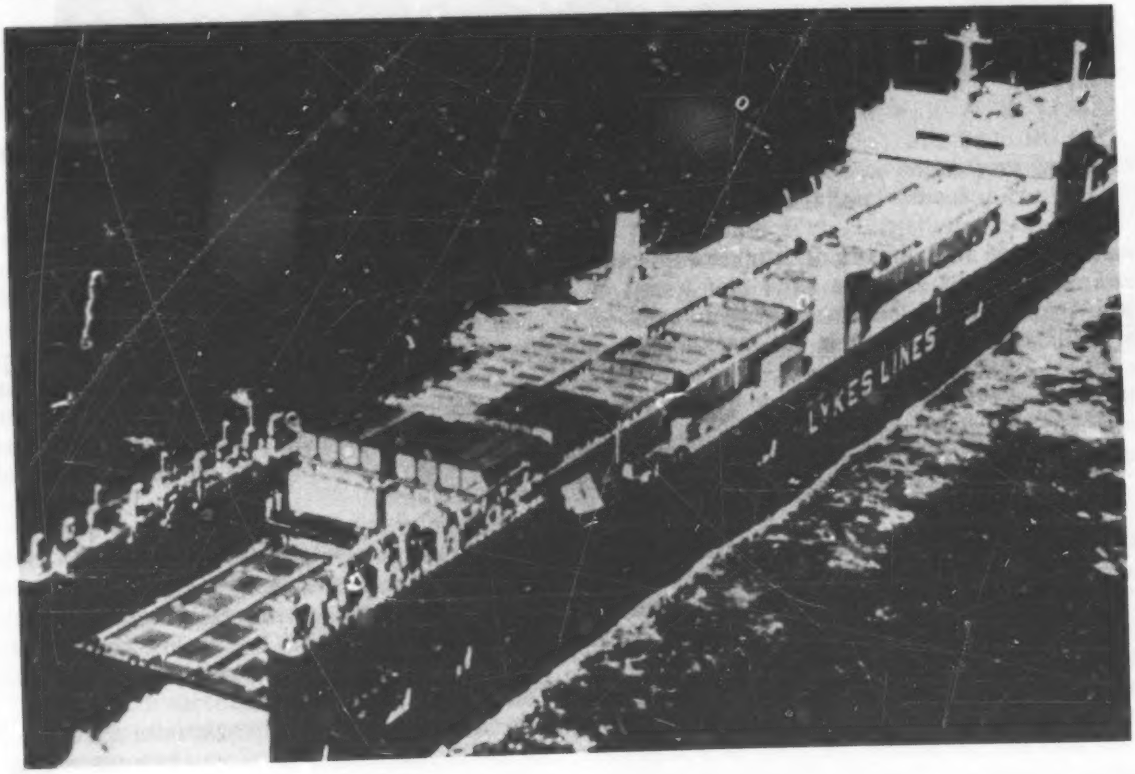

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Figure 4-5.—Seabee.

commodity, towed to a seaport and loaded aboard the barge-carrying mother ship. The 38 barges that a Seabee carries are loaded by a giant stern elevator that lifts them from the water. Once on the ship, barges are moved by a roller system to cells where they are positioned somewhat like containers on a container ship. No dock is needed, and the Seabee is completely self-sustaining. A Seabee can carry the equivalent of 1,478 twenty-foot containers and average speed is 19 knots.

The Seabee design is particularly useful to MSC since it can carry oversize cargo such as docks, river craft, and helicopters, and can handle a wide variety of cargo types. In commercial trade, a barge carrier is most competitive when linked to a river system that enables its barges to penetrate markets away from the seacoast. It also is an effective means of providing service to undeveloped countries where port facilities are lacking.

What could be a major problem in some instances is that a Seabee is out of commission whenever its elevator loading and discharge system is inoperative. LASH vessels use a different cargo-handling system. They have giant cranes at the stern that can lift a barge from the water and position it in the ship's cells. It, too, can have its productivity curtailed when the ship's crane is inoperative.

There are several different types of LASH designs (figure 4-6). These differences are primarily in the number of barges carried in the holds and the size of the ship. Some can carry from 43 to 73 barges, and their TEU

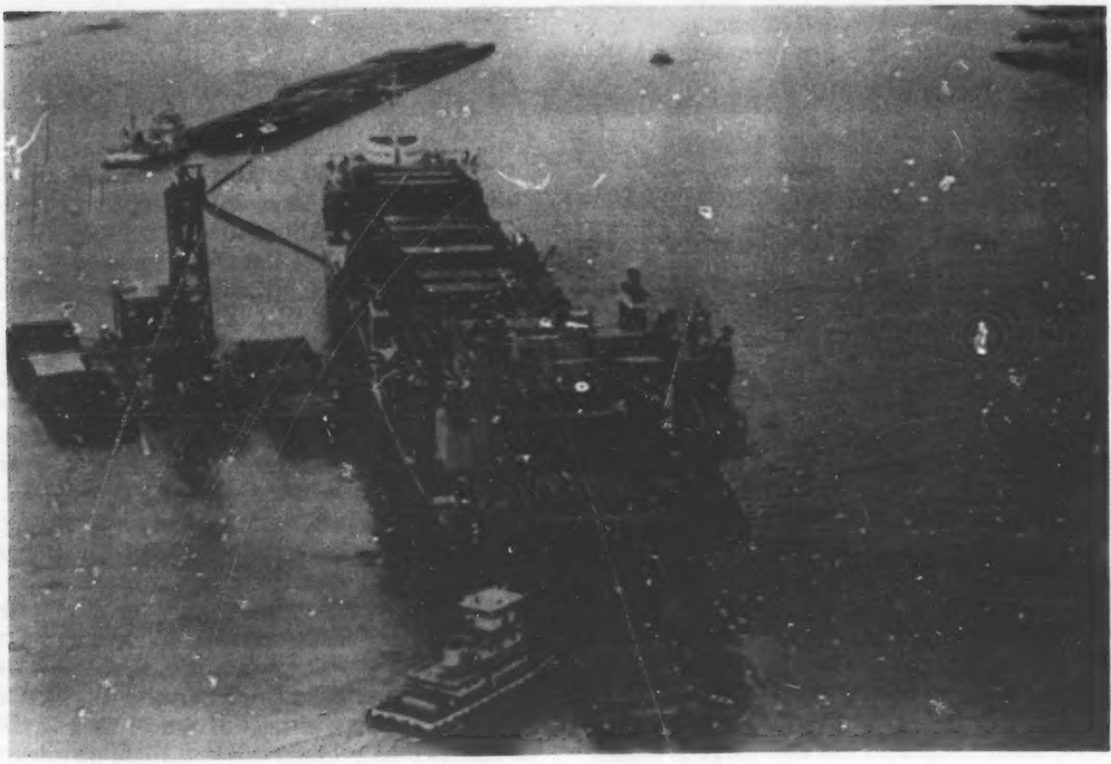

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Figure 4-6.—LASH off-loading stern.

capacity ranges from 185 to 625 containers. Other LASHs carry only 24 barges and have a TEU capacity of from 768 to 868 containers. The basic lighter or barge size is 61-1/2 feet by 31-1/2 feet by 14-1/2 feet. Each barge has a cargo capacity of 90,600 cubic feet. From 35 to 40 crewmembers are required to operate a LASH.

LASH ships are useful for support of military services becauses they are versatile and flexible. For example, barges can be moved inland since LASHs are self-sustaining and, because of their high productivity, a product of space, speed, and fast turnaround time. They also can carry some containers. But, because LASH ships are most competitive in commercial trade when operating on routes that allow them to link with barge traffic on river systems or in coastal waters, few new ones were built in the early 1980s. Two of the 18 ships operating had, in fact, been chartered to MSC for deployment in the Near-Term Pre-Positioned Force. Several other LASH ships already had been converted to container ship configuration. LASH ships operating in the early 1980s included:

No. of Ships	Class	Design	Barge Capacity	TEU Capacity	Draft	DWT
7	Austral Lightning*	C8S81B	24	118-868	35′	29,800
2	Ben Harrison	C9S81F	89	334	38′	40,900
9	Delta Mar	C-9S81D	--	288	38′	40,900

*Three carry 24 barges and have 762 to 868 TEU capacity; four carry from 43 to 73 barges with capacity from 118 to 625 TEUs.

TANKERS

Ships in the U.S. flag tanker fleet at the beginning of the 1980s were more numerous than they had been in the 1970s. Approximately 290 were in operation. They fell into three categories—the crude tankers, the product tankers, and specialized and small tankers. In the latter category, the Maritime Administration included integrated tug and barge systems, or ITBs. Tug and barge systems can carry almost all types of cargo—liquid, dry bulk, vehicles, containers, and the like. Three dry cargo integrated tug and barge systems were operating in the early 1980s.

The composition of privately owned U.S. flag tanker fleet at that time was as follows:

PRIVATELY OWNED U.S. FLAG
TANKER FLEET

No. of Ships	Type	Total DWT
8	Petroleum Tankers, less than 10,000 DWT	17,800
30	Specialized Tankers, asphalt, chemical, LNG 13 are LNGs	1,337,200
8	Integrated Tug and Barges 3 are dry cargo systems	268,900
185	Petroleum Tankers, clean product, greater than 10,000 DWT (coated)	7,863,000
59	Petroleum Tankers, dirty product, greater than 10,000 DWT (uncoated)	6,537,800
290	Total Number Tankers	
	Total Tanker Tonnage	16,024,700

Of the nearly 60 tankers in the crude tanker fleet, 20 were very large crude carriers in excess of 150,000 DWT. About 40 were between 20,000 and 150,000 DWT. Total DWT tonnage of very large crude carriers in the U.S. tanker fleet was 6.5 million.

Of the 195 ships in the product tanker fleet (carriers of refined products), 22 were on charter to MSC in late 1981. Most clean product tankers have coated tanks to limit contamination of the varied fuels they deliver. Four of the clean product tankers were in excess of 100,000 DWT. Nearly 160 were between 5,000 and 100,000 DWT. Total product tanker tonnage was 7.8 million DWT.

In the U.S. flag tanker fleet at the turn of the decade, there were 30 specialized tankers (figure 4-7). These tankers carry asphalt, chemicals, and natural gas that is liquefied because it is carried at minus 240°F. Thirteen of the 30 were LNGs or liquefied natural gas carriers. Eight petroleum tankers were under 5,000 DWT each, while the eight tug and barge systems accounted for 268,900 DWT of U.S. shipping. Total for the specialized

30.193

Figure 4-7.—A specialized type of ship designed to import natural gas.

tankers and ITBs was slightly more than 1.6 million tons. Overall, U.S. flag tankers accounted for slightly more than 16 million deadweight tons of U.S. shipping. Nearly 250 of the 290 tankers were privately owned.

As the United States entered the 1980s, it had a relatively modern tanker fleet, especially ships that carry clean products such as gasoline (figure 4-8). Most tankers are privately owned, primarily by oil companies. This means that there is little surge capacity the military services can draw on in an emergency. Less then 3 percent of the U.S. energy imports is delivered in U.S. flag tankers. Few are in the reserve fleet and the primary source of military augmentation, other than MSC charter of privately owned tankers (figure 4-9), is the Voluntary Tanker Agreement discussed in chapter 12. Basically, it provides a formal means for tanker companies to voluntarily make ships available in an emergency.

From the military viewpoint, the trend toward construction of larger tankers is not advantageous since ships of more than 100,000 DWT cannot currently get into any U.S. port. Worldwide military needs (especially in ports serving deployed U.S. troops) call for tankers with limited drafts—30 to 35 feet—carrying a small payload—30,000 to 35,000 DWT. Payloads are limited by storage capacity of military fuel depots which generally are small. Frequent service is more important than delivery of millions of barrels of fuel at one time. Also important to the military is tanker capability to discharge and load cargo in a short period of time.

OTHER TYPES OF VESSELS

Despite the fact that the United States relies heavily on import of dry bulk items, strategic

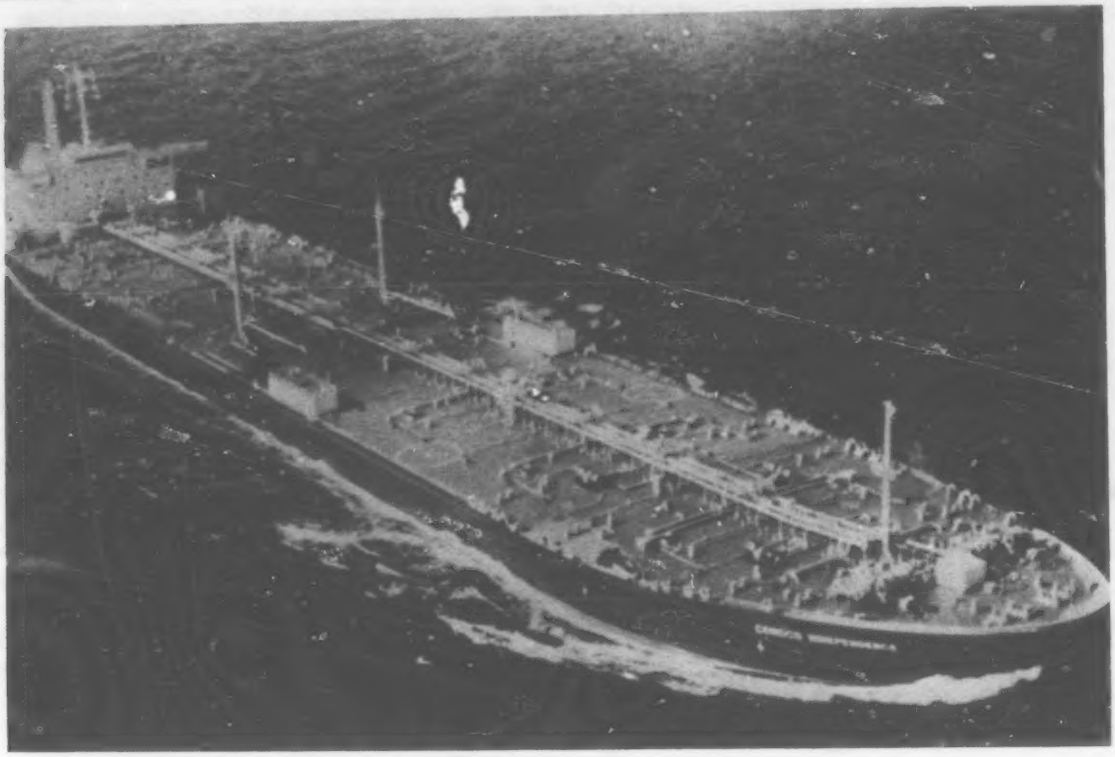

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Figure 4-8.—Millions of gallons of refined products can be carried in today's giant tankers such as the Conoco Independence (owned by Conoco Oil Co.).

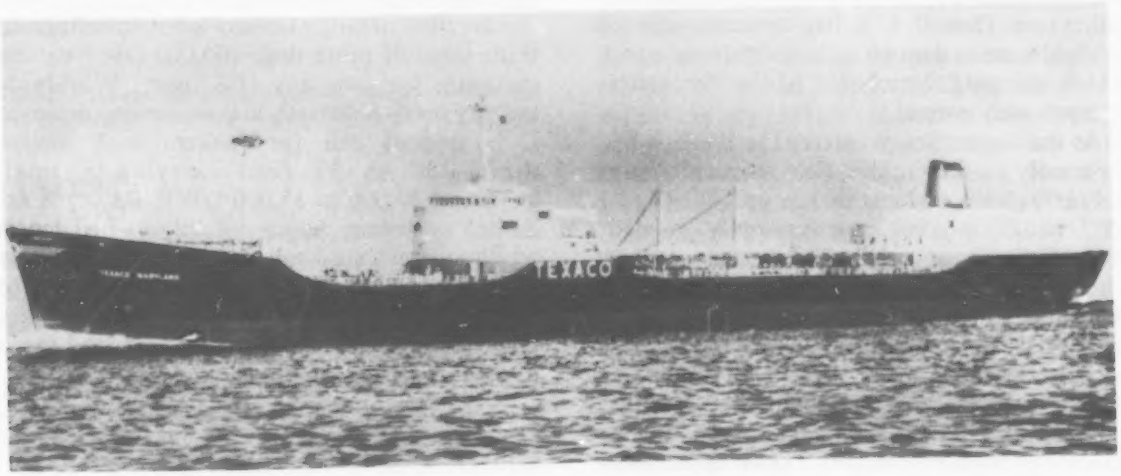

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Figure 4-9.—A large tanker, owned by an oil company, carrying crude oil.

minerals, ores, and other resources to maintain its technology, the number of dry bulk carriers in its merchant fleet is small, less than 20 ships and a half million DWT. MSC generally has two or three of those ships under charter in its controlled fleet. Together, U.S. flag dry bulk carriers deliver less than one percent of the volume of materials on the nation's list of strategic items. There are more than 90 resources on that list, many vital to the manufacture of vehicles, aircraft, rubber products, and so forth. More than 60 bulk carriers are closely monitored since U.S. reserve stocks are not as great as they were in the post-World War II period, the era of the Cold War.

Few carriers are apt to be built by private investors since dry bulk carriers receive little assistance from the Government, either in direct subsidies or tax breaks. It is more costly to build a bulk carrier in U.S. shipyards than in foreign yards. It also is more costly to operate a dry bulk carrier with U.S. crewmembers than with Chinese, Philippine, or other foreign nationalities.

Most of the dry bulk carriers built in the 1980s are used in the Great Lakes trade. The Great Lakes fleet of privately owned ships consists primarily of long, narrow, dry bulk ships, primarily ore carriers and tankers.

Two industry trends that accelerated in the late 1970s and early 1980s are intermodalism and development of integrated tug and barge systems. Unlike river barges, or those used aboard LASH or Seabee ships, ITB barges often have bows. In fact, they look like ships minus propulsion plants. They can carry all types of cargo as can triple-decked barges used by some tug and barge operators.

MSC has been active in pioneering the use of tug and barge systems, having negotiated contracts with maritime industry companies for delivery of cargo in Alaska and the far north, in Southeast Asia during the war there, and in the Caribbean in the early 1980s. The command continues to use tug and barge service in Alaskan and Caribbean waters, including a dedicated system for supply of the Marine Corps base at Guantanamo Bay, Cuba, via an overland rail link from Norfolk, Va., to Jacksonville, Fla., and tug and barge delivery to the base.

While the traditional method of towing ocean barges is still widely used, industry has continued to develop integrated systems which provide for a tug to be linked directly to the rear of a barge—often a notched barge—and to push it ahead of the tug. The tug is, in effect, a mobile power plant. While the cargo barge is being unloaded, the tug can continue to operate. However, most oceangoing barges pose dangers because of limited maneuverability of the tug and barge system. Slow speed is also a disadvantage.

There are, of course, other highly specialized types of ships in the U.S. merchant marine inventory. Included are those used in offshore drilling for oil and many small ships that operate in coastal waters in support of the oil industry. Few cable ships are in the U.S. flag inventory despite the fact that the military services frequently seek to charter them for maintenance of underwater communications cables or the laying of new cables—some of them for antisubmarine warfare or for monitoring systems that pinpoint the location of foreign ships. MSC often is forced to charter foreign flag cable ships, Canadian or British, to supplement its own cable-laying and repair ships. Cable ships appear to be ideal types for private investors to build for long-term charter to the military services.

TECHNOLOGICAL ADVANCEMENTS

The 1970s saw years of change for the U.S. maritime industry. The intermodal evolution brought more container ships along with barge carriers and RO/ROs. With the fuel shortage, U.S. carriers began to use diesel propulsion plants, a trend previously resisted despite use of diesel engines in other areas of the world. The primary reasons were their lower fuel costs and greater mechanical reliability.

Progress also was made in communications with the launching of maritime satellites. This was a giant step forward from the traditional Morse code to satellite voice communication and use of satellite provided data transmission systems.

A dominant reason for the industry's willingness to capitalize on available technology in several fields—in communications, in ship propulsion and navigation, in computer systems that allow better management of assets and monitoring of traffic, in safety and environmental protection devices, and many other areas—is an inescapable fact that the maritime industry has become capital intensive. No longer is shipping, or shipbuilding, labor intensive. The overriding consideration for labor management has become whether a contemplated investment or planned action will produce a profit.

However, while maritime technology advanced in the 1960s and 1970s, it is considered unlikely that significant changes in ship design will take place in the 1980s. Emphasis is on consolidation and on management of costly assets to improve productivity. Management is the name of the game throughout the remainder of the 1980s and probably will continue to be well into the 1990s.

U.S. LINER COMPANIES

The lineup of the companies involved in ocean transportation changed considerably in the 1970s and 1980s, to the point where one almost needed a "scorecard" to keep track of the players. Growth of intermodalism was a dominating factor. The cost of new ships, from $35 to $100 million and more, led to the disappearance of many small operators—those who operated tramp ships that sailed without schedule, picking up cargo where available and delivering it where needed. Those liner companies sailing ships over scheduled routes died with their "corporate boots on," victims of increasing operational costs and worldwide competition for cargo.

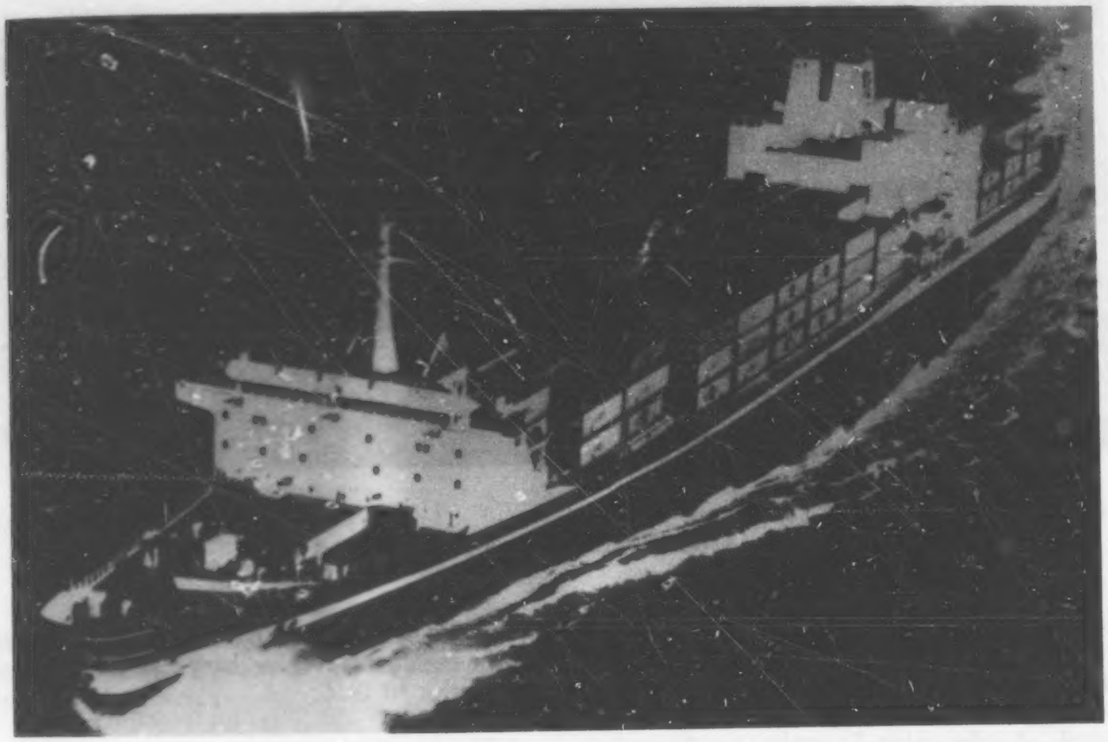
Other companies merged. Merger under a large corporate umbrella was, in fact, a necessity for some independent, family-type businesses that lacked capital to finance expansion and modernization. Large corporations bought up shipyards as well as shipping companies, often to take advantage of tax breaks and reap other financial benefits.

By mid-1981, there were 10 surviving U.S. liner companies, only 9 of them major carriers. They were the only U.S. flag carriers providing regular service on world trade routes. Together they carried approximately 25 percent of U.S. imports and exports moving in world trade, primarily high value items. Only one carrier operated without the aid of Federal subsidies. The remainder sought and relied on operational and construction differential subsidies intended to narrow the cost differential between U.S. shipping companies and shipyards and foreign counterparts. By early 1982, past efforts to scuttle subsidies for the U.S. maritime industry had gained momentum and changes apparently were inevitable. Surviving liner operators by mid-1981 were American President Lines (APL), with headquarters in Oakland; Delta Steamship Lines, Inc., based in New Orleans; and Farrell Lines, Inc., New York, which merged with American Export Lines at the end of the 1970s. Lykes Brothers Steamship Company in New Orleans, and McCormack Lines, Waterman Steamship Company and Prudential Lines, Inc., all New York companies with a rich maritime history, continued to operate over world trade routes. So did United States Lines and Sea-Land Service, Inc., both New Jersey-based corporations. Smallest of the 10 liner companies is American Atlantic Lines, also headquartered in New York City.

Together the 10 companies operated approximately 140 ships over world routes in liner service. Approximately 65 additional container ships were operated by Sea-Land Service, the only liner company that did not then receive operational or construction subsidies from the Government. Liner service was provided by American companies from the U.S. East, West, and Gulf Coasts to Europe, the United Kingdom, South America, the Far East, Middle East, Africa, Malaysia, Singapore, throughout the Atlantic and Pacific Ocean areas, in the Mediterranean, the Persian Gulf, and Red Sea—in short, the world.

But the liner companies are somewhat like the peak of an iceberg. Collectively, more than 160 U.S. companies operate U.S. flag ships. The total may be even twice that number since many have several subsidiaries. Tanker companies, for example, often set up a separate corporation for each ship to reap potential advantages of laws governing taxes and depreciation and to limit liability of the owners. Some companies may operate only one or two ships. Others may have 10 or more.

In 1981, Sea-Land, largest of the U.S. flag companies, had 47 ships of its own and chartered an additional 19 ships. Neither Sea-Land (figure 4-10) nor any other U.S. flag carrier controls as many ships as the Military Sealift Command whose total fleet is well over 100 ships. However, MSC has fewer dry cargo ships in its controlled



284.14.2

Figure 4-10.—A Sea-Land ship carrying cargo.

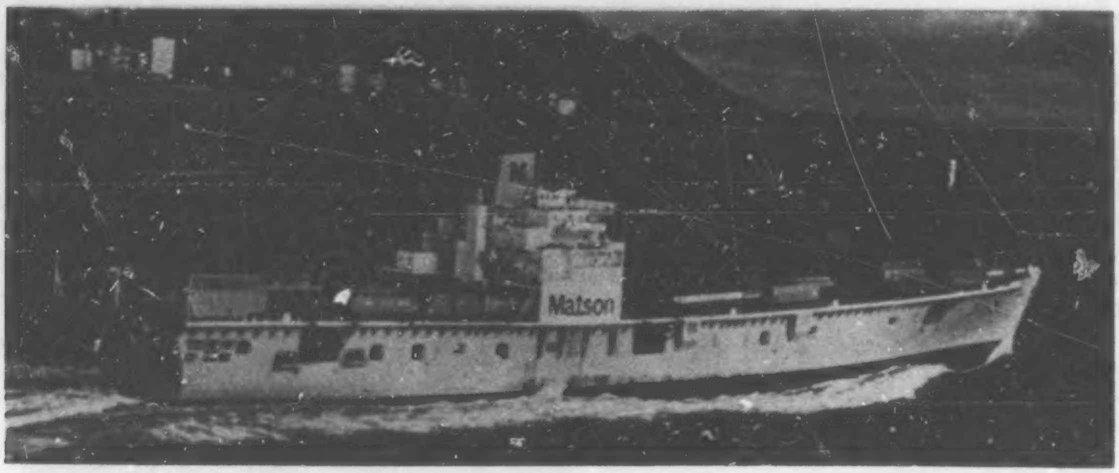
fleet than Sea-Land. Even the combined MSC tanker and dry cargo ship total does not equal the number Sea-Land operates in world trade.

"Snapshots" of a few shipping companies might explain the elements of the shipping industry and their relationships with their customers.

Matson Navigation Company is an old-line carrier (figure 4-11), launched in 1882 when Captain William Matson, then 33 years old, sailed a three-masted schooner from San Francisco to Hilo, Hawaii, with 300 tons of food, plantation supplies, and general merchandise. It returned to San Francisco with sugar, coconuts, hides, and railroad ties.

In 1910 Matson began passenger service between Hawaii and the continental United States. By 1917, the company operated 14 of the largest, fastest, and most modern ships in Pacific passenger-freighter service. Most were requisitioned when World War I broke out. In the 1920s and 1930s the company expanded, building its own terminals, acquiring its own hotels in Hawaii, and subsequently adding an air service. During World War II, Matson ships carried more than 760,000 troops and millions of tons of cargo.

After that War, Matson divested itself of hotels, an oil company, and other nonshipping assets, having previously gotten out of the air passenger business to concentrate on ocean transportation. Matson freighters were converted to combination container-and-bulk-sugar or container-and-automobile carriers. By 1970 all its passenger ships had been sold, and Matson introduced roll-on/roll-off service to Hawaii trade in 1972. Additional container ships were acquired in the mid-1970s and Matson launched a program to modernize and expand its container yards. Currently, Matson provides specialized service



284.18.4

Figure 4-11.—Matson RO/RO.

in the Pacific, operating five container ships, a self-propelled container barge, a towed container barge, and two sugar-automobile-container combination ships. Matson also operates two roll-on/roll-off trailer ships. The units provide service in the Pacific, to Europe, and in the U.S. coastal trade, both on a liner and nonscheduled basis. The company is owned by Alexander and Baldwin, a company involved in both the sugar and pineapple industries.

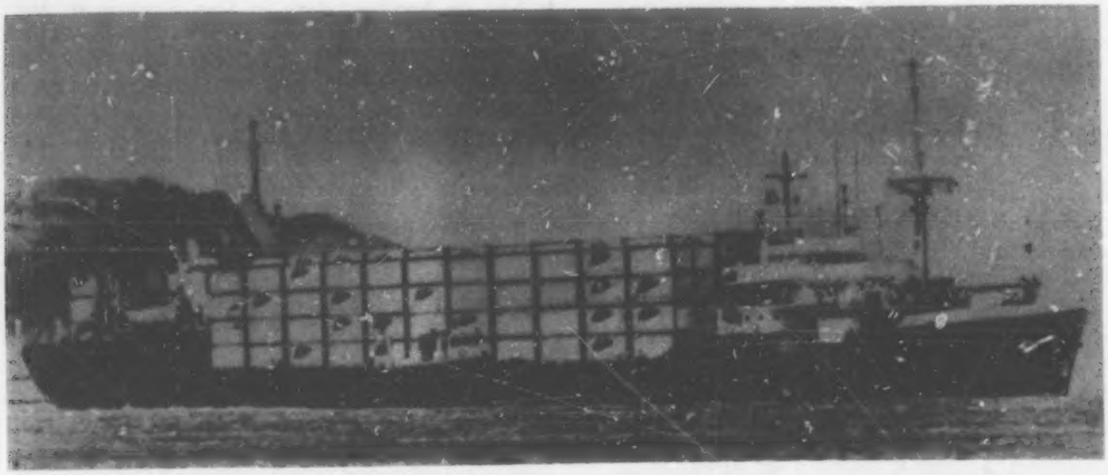
If any carrier's name is synonymous with intermodalism, it is that of Sea-Land. In 1956, Sea-Land placed 58 truck trailers on the deck of a converted tanker in Elizabeth, New Jersey, and delivered them to Houston, Texas. It was the beginning of what has been termed the container revolution.

In ensuing years, containerized shipping has grown from a few converted ships to more than 1,500 vessels. The number of containers in use increased from 5,000 in 1958, to more than 2 million in 1980. Approximately half are owned by American ocean carriers or by companies organized specifically to lease containers to shippers or carriers.

Today more than 75 percent of the cargo moving in world trade that can be containerized is shipped in containers (figure 4-12) by a segment of the ocean-shipping industry that did not even exist prior to 1956.

The company that started the revolution, or evolution, in transportation by 1981 served more than 180 ports and cities in 52 countries and territories. It owns and uses approximately 80,000 containers, more than any other carrier in the world, and exercises exclusive control over terminal facilities in 17 ports and preferential control in 12 other ports. Sea-Land owns nearly 30 container cranes in a dozen locations and leases 30 more cranes in 16 locations. The company operates 42 truck terminals. Sea-Land is owned by R. J. Reynolds Industries, Inc.

Sea-Land management, operating without the aid or restrictions of Federal subsidies, has been markedly effective in penetrating the right market at the right time. For example, by withdrawing from conferences of carriers that move eastbound transpacific cargo at agreed-upon conference rates, Sea-Land upped its share of eastbound trade from 6.7 to nearly 8 percent in 1980 by improving its competitiveness. Introduction of highly fuel-efficient, diesel-driven container ships to replace fuel-guzzling SL-7 vessels, reduced



284.14.1

Figure 4-12.—The SS California; a container ship.

operating costs. Sea-Land's share of the commercial market ranges from about 7 to 12 percent on the routes it serves.

Its strongest competitor in the Pacific, with assets about equal to those of Sea-Land in that area, is the American President Lines. The chief competitor in the Atlantic is the United States Lines, headed interestingly enough in 1981 by a former trucking official, Malcolm McClean. He controlled Sea-Land in 1956 when it inaugurated container service. As the era of the 1980s began, U.S. Lines operated 19 full container ships and had another 11 breakbulk ships in its fleet which were chartered to MSC. U.S. Lines served trade routes to Northern Europe, between the U.S. East and West Coasts, with service to Panama and, on other routes, serving Hawaii, Guam, and the Far East. Its parent company is First Colony Farms, Inc., a Delaware corporation.

The merchant fleet operated by Waterman Steamship in 1981 consisted of eight barge carriers of the LASH-type and two Mariner class breakbulk ships. Three additional ships capable of carrying a combination of containerized and roll-on/roll-off cargo were scheduled to be put into operation in late 1981 and 1982. Waterman trade routes primarily linked the United States with Europe, the Middle East, and Pacific area. Waterman is an independent company.

Moore McCormack Lines' fleet in 1981 included 13 general cargo vessels serving in the liner trade on routes linking the U.S. Atlantic Coast with the East Coast of South America, and the South and East Africa areas. Included were ports from Maine to Florida, and in Brazil, Paraguay, Uruguay, and Argentina, as well as Angola, the Somali Republic, Ascension and St. Helena Islands, and the Malagasy Republic. The parent company is Moore McCormack Resources, Inc.

Delta Steamship Lines operated 24 ships in late 1981. Four were combination container ships and barge carriers; 16, general cargo vessels; and 4, combination cargo-passenger ships. These ships carry a limited number of passengers, generally 12 or fewer. Routes served by Delta included those extending from the United States to Central and South America, the Caribbean, and West Africa. Delta is owned by Holiday Inns, Inc.

Lykes Brothers Steamship Company, a Link Temko Vought (LTV)-owned company, is the only U.S. operator of Seabee barge carriers (figure 4-13). The Soviet Union bought the design from Lykes in the 1970s and now operates one or two Seabee-type ships Lykes, however, operates over many world trade routes in the Atlantic and Pacific. It also has chartered MSC roll-on/roll-off ships from its fleet for use in the NTPF, as well as a number of other specialized cargo carriers. Charter of a Seabee also has been discussed since the ship is particularly suitable for carriage of helos, tanks, bridges, barges, and other bulky cargo.

U.S. companies involved in towing and barge operations are generally small. Their operations are concentrated primarily in coastal waters although ocean towing is an exception to that rule. Tug and barge operators also operate harbor tugs, supply boats for the offshore oil or construction industries, and carry out a variety of maritime operations. Perhaps the largest and most varied in scope is the Crowley Maritime Corporation. It has its headquarters in San Francisco, but operates worldwide in the Middle and Far East, in Gulf Coast waters and Alaska, and throughout the Northwest Coast of North America.

Crowley has a fleet of 81 tugs, 25 of which operate in the northwest and Alaska, 13 in California, 28 in the Gulf and Caribbean areas, and 15 internationally (figure 4-14). The company has 136 barges, including triple-decked barges (figure 4-15), roll-on/roll-off barges, and other special types. Many have bows like ships and are designed for ocean lift of cargo. Others operate in coastal or inland waters. Fifty-six of the Crowley barges are used in Alaska and other northwest operations, with 33 operating internationally. Of the more than 90 harbor and river tugs Crowley operates, nearly 40 are in the northwest and Alaska, with 45 in California.

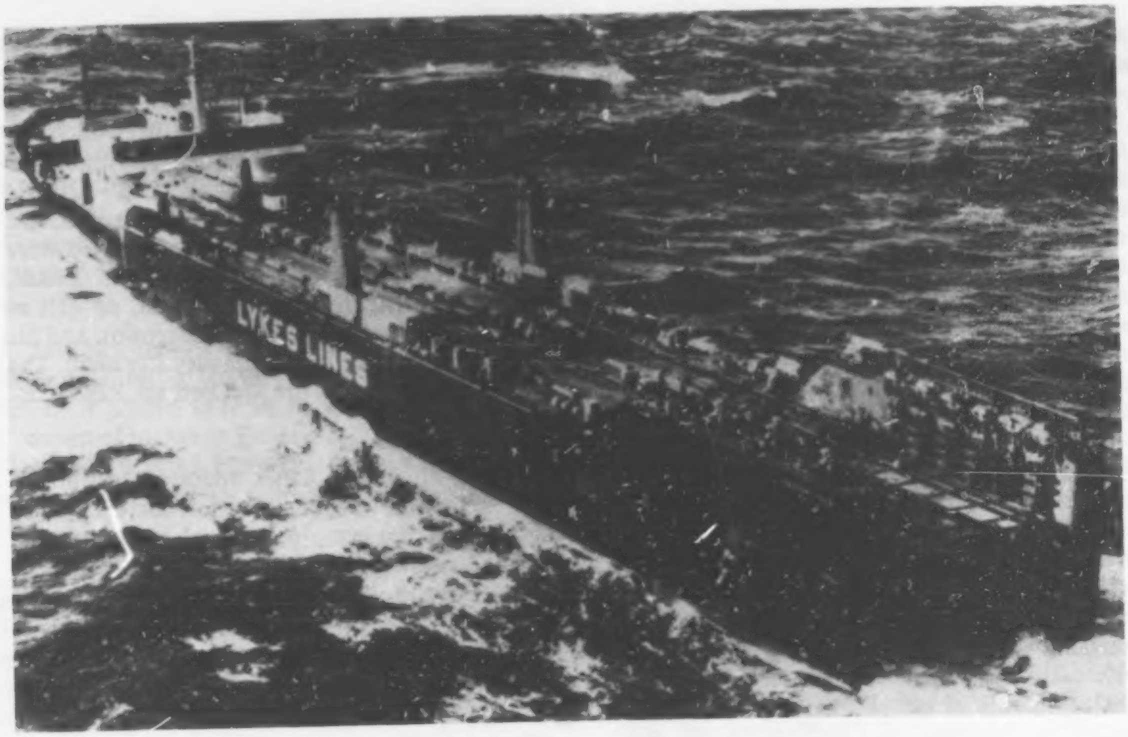


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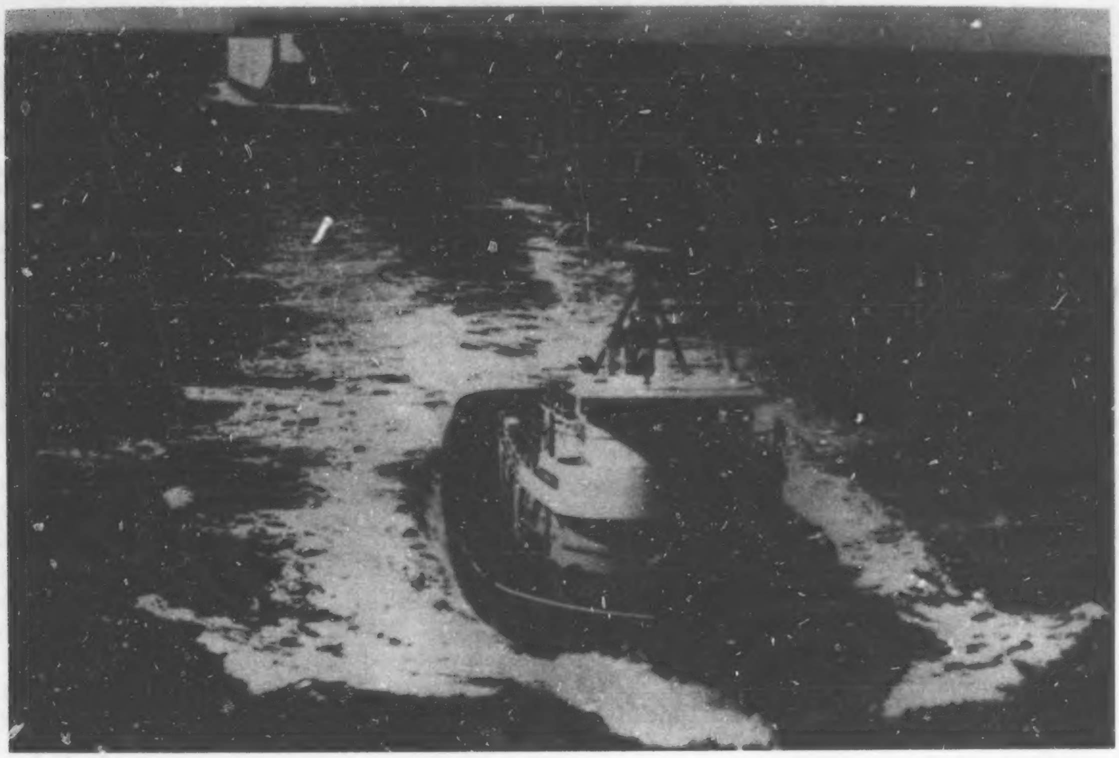
Figure 4-13.—The Doctor Lykes is one of America's fleet of barge-carrying merchant ships which is the largest in the world. One advantage of this type of ship is that barges fully loaded with a wide variety of cargoes can be quickly loaded and unloaded using a stern elevator or a large crane.



30.183.1

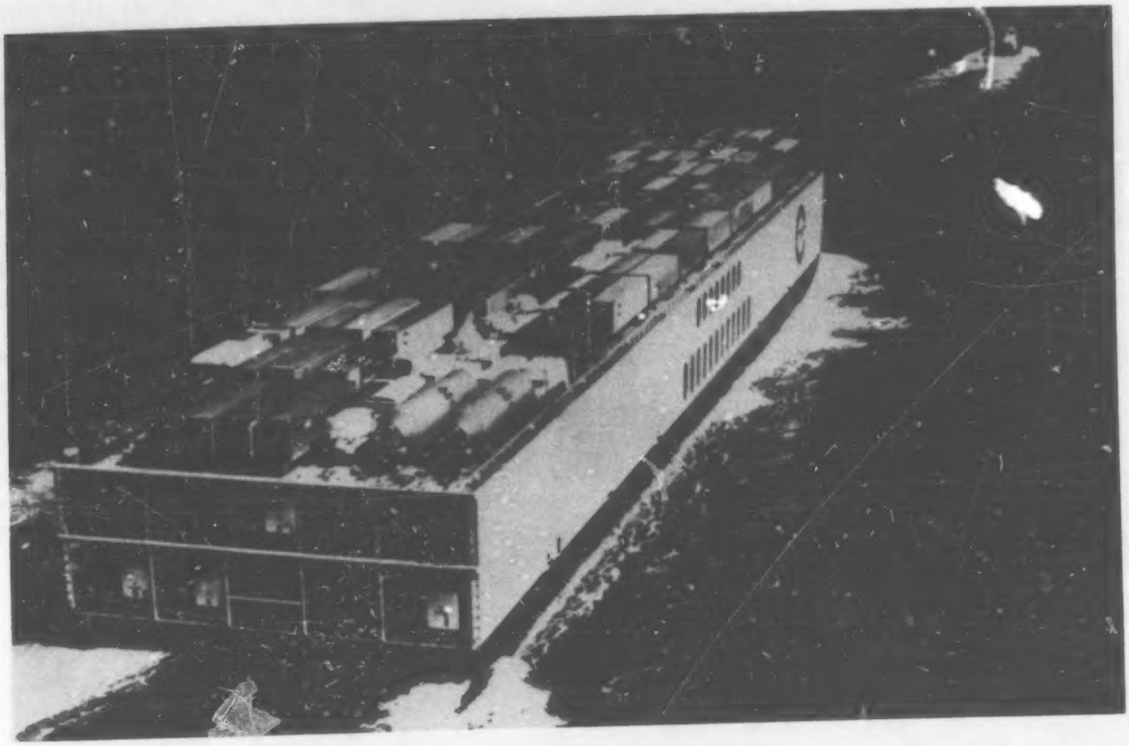
Figure 4-14.—A tug towing a Crowley barge.

Crowley has nearly 100 river and harbor barges and more than 60 vessels listed in the category of "other types." Most are specialized, such as cruise ships for the Catalina tourist trade, supply boats, crew boats, water taxis, derrick barges, and pollution control craft.

To operate its far-flung organization, Crowley has five divisions. The Caribbean Division has a terminal at Lake Charles, Louisiana, that handles cargo from the Midwestern and Western United States to Pacific Ocean destinations. Five roll-on/roll-off barges, measuring 400 by 100 feet, have been converted from double to triple decks and offer customers about 5,000 spaces per month for 40- and 45-foot trailers that can be driven aboard the barges for delivery in the Gulf or Caribbean areas. Oil barges are also operated in those areas, both for lift of oil from offshore crude carriers to refineries, or for bunkering of the tankers that cannot enter U.S. ports. Crowley even operates tractor-trailers that deliver refined products and varied types of dry cargo right to the customer.

The Northwest Alaska Division monitors contractor operations. The company provides military services under MSC contract in the far north, and carries out Arctic salvage operations with new, unique tugs designed for cold weather operations. Much of the bulky cargo, including pipe for the Alaskan pipeline, was delivered 600 miles north of the Arctic Circle by Crowley tugs and barges. Crowley still supplies Prudhoe Bay and other sites associated with the tapping and delivery of oil in the Arctic area. The company even has icebreaker barges and provides land transportation service with special all-terrain vehicles.

The California Division is involved in transport of cargo up and down the coast;



30.183.2

Figure 4-15.—Crowley maritime three-deck barge.

supply of offshore oil rigs; delivery of petroleum products; towing, lightering, and bunkering services; and operation of cruise vessels to the Catalina Island located 26 miles off the California coast. The International Division is heavily involved in support of the oil industry, having lifted huge boilers and freshwater conversion equipment as high as an eight story building and weighing nearly 1,500 tons each. Crowley is also involved in offloading and delivering cargo inland, relying in some instances on 450 horsepower tractors. These tractors are specially designed to provide power to all 12 tractor wheels and use as many as 16 hydraulic self-jacking trailers with a total of 576 wheels at a single time. Crowley's specialty in transportation has been in doing the unusual, the unique job requiring total transportation expertise.

In the Middle East, for example, the company has operated as many as 150 tractors and more than 300 trailers in a coast-to-coast trucking service in Saudi Arabia. In Mexico, company tugs and barges moved rock for a breakwater; and in Australia, Crowley has provided tug and barge lifts of bulky, outsize cargo, as well as deep-sea towing and offshore support of oil, gas, and mining industries. In the Arctic, Crowley provides icebreaker barges to support oil companies. In northwest Canada, the company lifts cargo over the Mackenzie River system.

The Crowley Construction Division has been active in constructing airport runways in Alaska and other areas. It installed the first single anchor leg mooring system on the American West Coast for the delivery of crude oil from an underground piping system to a moored tanker, and provided derrick barges and other specialized craft for a variety of construction projects. The division also repairs and builds piers, constructs roads and bridges, and handles Crowley's own construction needs.

Crowley is a new transportation company. Unlike most of those making up the U.S. maritime industry, it is involved in a wide variety of functions—many specialized in nature and unique in themselves. Its services extend beyond the ocean's edge. Crowley Maritime seeks and fulfills jobs that other maritime companies cannot do. It is likely that tug and barge operations and related services, such as those provided by Crowley, will continue to expand in both the short and long term. In the long run, tug and barge operators may do more to change the nature of maritime industry operations than any other element of that industry.

There probably is no typical tanker operating company. Some operate U.S. flag ships, others foreign ships, and a few operate both U.S. and foreign ships. Oil companies also have their own tanker fleets. Some operators have both liquid and dry bulk ships in their fleet. The following are a few examples of U.S. tanker operators.

Keystone Shipping Company, with headquarters in Philadelphia, Pa., is more than 60 years old. Its ships operate worldwide and carry chemicals, clean products, crude oil, and liquefied gas, among other items. In addition, Keystone acts as a contractor and management company for ship owners and has served as a tanker-operating contractor for MSC.

Keystone was founded in 1919 when Charles Kurz purchased a tank vessel and incorporated his existing steamship agency business. By 1929 his fleet had grown to 10 ships. The current company name came into being in 1941; ship operations previously were the responsibility of the Pennsylvania Shipping Company. Keystone was organized to serve the War Shipping Administration. At the peak of World War II, the company operated and managed 75 tankers and earned a Meritorious Service Award from the Federal Government. It subsequently pioneered carriage of liquid chemicals and currently is the foremost U.S. flag carrier of bulk liquid chemicals. Its ships operate in the Atlantic, Pacific, and Caribbean. They have carried oil from the North Slope and grain to the Soviet Union, Bangladesh, Greece, India, Pakistan, and Turkey.

At the end of 1981, Keystone had a fleet of 13 tankers, 3 product tankers, 8 chemical carriers, and a single liquefied natural gas carrier. Ship sizes range from about 18,000 to 180,000 DWT. Keystone pioneered the development of the drugstore parcel tanker, a title given a ship that can carry a variety of chemical products such as caustic soda, phenol, and acetic acid at the same time. It has different types of tanks, some coated, others stainless steel. These tankers are equipped with as many as 16 different pumping systems to load and discharge cargo without contamination. Keystone is an independent company.

Trinidad Corporation, also of Philadelphia, operates ships for other owners, including MSC. In 1981 it operated 9 MSC tankers, as well as 11 U.S. flag privately owned ships and 1 foreign flag tanker. Sizes ranged from 125,000 to 27,000 DWT. Areas of operation include the U.S. Gulf and East Coasts, the West Coast, Alaska, Hawaii, and Panama, plus many worldwide ports. The company provides primarily liquid bulk tramp service and vessel management. Trinidad is owned by the Apex Shipping Company.

A typical small tanker company is the American Foreign Steamship Corporation. Based in New York, it operates two turbine-driven tankers, both under 35,000 DWT. The small independent company operates mainly in the coastal, unscheduled trade. Another typical small company is the Newport Tankers Corporation out of New York. It has only a single tanker and operates in the Gulf Coast and Panama areas.

A worldwide tramp operator is the Coscol Marine Corporation of Houston, Texas. Coscol has 10 tankers; 7 are foreign flag—not a typical practice. Coscol operates in the tramp trade, worldwide, and is a subsidiary of the Coastal Corporation.

An old-line U.S. tanker operating company is the Interocean Management Corporation. It has more than 50 years of experience and currently operates new 166,000 DWT tankers in the Alaskan trade and very large crude carriers of 265,000 DWT and up. It also operates the largest ship ever built in the Western Hemisphere, the 392,000 DWT U.S.T. Atlantic. Interocean also has high speed RO/ROs serving routes from the U.S. West Coast to Alaska. Interocean has seven ships, two of the RO/ROs, and operates between the Persian Gulf and Europe, from Panama to Alaska, and between the Gulf Coast and Mexico. It is an independent company.

The American Trading Transportation Company of New York operates four product tankers in both coastal waters and worldwide. It is a subsidiary of the American Trading and Production Company. The Apex Marine Corporation is one of the largest U.S. operators, having 14 tankers and 2 oil-bulk-ore carriers—combination ships known as OBOs. Included among its fleet are the VLCCs *Williamsburg* and *Brooklyn*. The company operates worldwide and in the coastal trade, *modus operandi* for most of the independent tanker operating companies.

However, one large operator, the Maritime Overseas Corporation, which has 16 tankers and 2 dry bulk carriers, operates all of its tankers in the coastal trade, mainly carrying Alaskan oil. Two dry bulk carriers carry coal to Europe from the U.S. East Coast. It is a subsidiary of Overseas Shipholding Group, Inc., which in 1980 controlled a fleet of more than 70 ships. More than 90 percent of the company's international fleet was on charter at the end of 1981, with 71 percent chartered through 1983.

According to the company's 1980 annual report, the size of its dry bulk fleet doubled in the previous 2 years, and anticipated even greater growth. Despite the fact that the tanker market slipped somewhat as oil consumption worldwide dipped, company managers reported their ships were busy, often serving as storage facilities for excess oil.

That same report concluded that the 1980s and 1990s would bring increased marketing opportunities for dry bulk operators, particularly for the carriage of coal, and that tankers would continue to be in demand over the foreseeable future.

Familiar corporate names identify tanker fleets maintained by U.S. oil companies. The Chevron Shipping, for example, operates a fleet of more than 50 tankers. Included in 1981 were two U.S. flag 70,000 DWT steam turbine tankers, five gas turbine tankers of 35,000 DWT each, and a 17,000 DWT steam turbine-driven tanker. Also in the Chevron fleet were 12 tankers flying the Liberian flag, and ranging from 54,000 to 150,000 DWT. Twenty-two tankers flying that same flag ranged from 250,000 to 272,000 DWT, and three ships exceeded 406,000 DWT each. They also were registered in Liberia. Two British flag tankers and four flying the flag of the Netherlands rounded out the Chevron fleet.

Recognizing the shortage of small tankers, Chevron had six 35,000 DWT tankers on order in 1981 from Japanese shipyards. Generally, Chevron's U.S. flag tankers trade in U.S. Pacific and intercoastal waters, while foreign flag ships trade worldwide. Chevron, of course, is a subsidiary of the giant Standard Oil Company of California.

The 18 oceangoing tankers operated by the marine department of the Exxon Corporation represented about 9 percent of the U.S. flag tanker total in 1980, ranging in size from 27,000 DWT to 165,000 DWT. Exxon also operates barges on inland waterways; much of the cargo its ships lift moves from Exxon refineries to the eastern seaboard markets. Substantial volumes of crude oil are lifted from the Gulf of Mexico to New Jersey refineries. Other lifts of substantial volume are between Valdez, Alaska, and the Exxon refinery at Benicia, Calif. Exxon refineries in the Gulf Coast area turn out more than 1 million barrels a day for shipment in company tankers.

Getty Oil is also a big tanker operating company, having a fleet of 17 tankers ranging from 4,000 DWT to 24,000 DWT. Most of the tankers were built in foreign shipyards. The company also operates a few OBOs. ARCO Marine has a fleet of 13 tankers and crude carriers, 3 flying the Liberian flag. Eight of the 13 ships are in excess of 100,000 DWT. Most are used in the Alaska-Panama and Alaska-West Coast trades, except for the three foreign flag ships which sail primarily between Indonesia and the U.S. West Coast.

Organizationally, there is little difference between a company that operates liquid and dry bulk ships and a liner company that operates container ships, breakbulk ships, or RO/ROs; nor is there much difference organizationally between an independent tanker operator and an oil company fleet. In fact, while the independents have grown and control more than half of U.S. flag tankers, the oil companies have increased the size of their fleets by chartering tankers from independent companies. Leasing, whether it be of ships, computer systems, or fleets of vehicles, offers financial advantages which offset those of ownership.

A typical ship-operating company has at least two vice presidents who are responsible to the head of the company. Although their titles may vary, one is directly responsible for operational matters. Under that person's control are company staff organizations such as operations, engineering, supply, and marine personnel. Port captains are part of operations, and the company staff manages and maintains contact with its ashore and afloat personnel through the port captains. Port engineers perform similar functions for the engineering departments. Supply is responsible for purchase of shipboard equipment, fuel, and so forth, and supervises the functional operation of the ships' stewards departments. Also under the vice president for operations is a marine personnel section responsible for dealing with crewmembers and their unions for recruiting, pay, and similar matters.

A second vice president of a liner or tanker operating company generally is responsible for automatic data processing systems which the company operates or purchases for accounting and office support systems, for insurance matters, and for similar functions. The company comptroller also reports to the head of such a support organization whose head often is the company secretary-treasurer.

Company presidents, executive officers, or operating officers—whatever they may be called—generally retain direct control of the company's contracting function. The charter of ships to the military services, to oil company fleets, or to other governmental agencies or private businesses is handled by contracting. Contracting functions of both liner and tanker operators have become very important elements of the business because (1) many ship owners contract out the operation of their ships, (2) oil companies more and more rely on lease rather than construction of ships, and (3) Military Sealift Command relies heavily on long-term lease of both tankers and dry cargo ships.

The importance of contracting as a company function was intensified in the 1960s and 1970s by virtue of the tremendous capital investment needed to build modern specialized ships. More often than not, ship ownership is vested in financial institutions such as banks, insurance companies, and pension funds. Ships they own are leased to ship-operating companies which frequently take the initiative in the procurement of ships they need by private capital investment and leaseback.

MARINE PERSONNEL AND MARITIME UNIONS

In the 1960s and 1970s, there also was a definite effort to reduce the size of U.S. flag ship crews. Some claim that rising labor costs sparked that drive, while others contend it was a direct result of automation designed to increase ship productivity. Either way, modern container ships, barge carriers, tankers, and other specialized vessels may carry 25 or fewer crewmembers, about half the number needed on many World War II vintage ships. Some tankers are automated to the extent that engine rooms can be left unattended while a ship is in transit. Cargo-stripping systems are highly automated in modern tankers. Specialized dry cargo ships are loaded and discharged with the aid of highly sophisticated shore-based cargo-handling systems and equipment.

However, departmental organization of ship crews has not changed. Each ship has three departments—a deck, engineering, and stewards department. The deck department, which includes the ship master, is supervised by a chief officer. It is responsible for operation of the ship and its equipment, navigation, and other matters, except for engineering functions. Those are controlled by a chief engineer and up to three or four officer assistants. Size of the stewards' department is dependent on the size of the crew and the type of feeding arrangements aboard the ship. In past years, crewmembers enjoyed restaurant-style service aboard ship. New ships, however, generally have cafeterias with self-service lines. As a result, a stewards' department can contain as few as two or three people; however, most have six to eight. Overall, crews of most modern ships fall into the 25- to 35-person range. Size of the ships can be misleading since some giant tankers may have as few as 12 to 14 crewmen.

Since the work aboard ship is highly specialized, some crewmembers are on duty while others are resting. As a result, there is far less direct contact among the crew than there used to be. Specialization is a way of life on oceangoing ships just as it is in the factory or on the sports field.

There is no doubt that maritime unions exercise great clout in the U.S. maritime industry. As a practical matter, maritime management and maritime unions are "in the same boat." Each supports the other, not only in attainment of business objectives, but also in assuring legislative and political support through various programs and policies of the Federal Government.

As crew sizes have been reduced in modern ships, a lesser number of jobs is available. To assure employment opportunity, unions have negotiated agreements with maritime management that allow oceangoing mariners to work only about 6 months each year with no lowering of income.

In the early 1980s, however, the manpower picture began to change. In some ratings (engineers, for example) spot manpower shortages occurred and unions allowed some members to work additional weeks each year. Other factors are the advanced age of many mariners active in the early 1980s—50 years or more—and the inability of the industry to attract and retain young people. A major problem is that ships today are geared to fast turnaround and high productivity, with as much time as possible spent in profit-generating operations. The result is that crewmembers get to spend little time ashore with families or for recreation. This characteristic of a seagoing job is not highly attractive to potential mariners.

Specialization, reduced crew sizes, and expanded automation aboard ships also tend to create demands for employees with both higher and multiple skills. As the complexity of shipboard equipment increases, both initial training and retraining requirements increase.

Thus, with approximately 2-1/2 mariners available in the work force for each oceangoing job in the early 1980s, it was considered likely that the size of the work force would continue to decrease. Like the ships they sail, mariners are expected to become more productive by increasing their abilities to monitor and direct remote control and automated systems aboard ship. Many seek jobs outside the industry—jobs with greater long-term stability.

Recognizing these trends, maritime unions expanded efforts to attract nonmaritime skills in the 1970s. One of the larger unions is the National Maritime Union (NMU). It represents unlicensed mariners, primarily those in the deck department. At the turn of the decade, NMU had more than 45,000 members, but only about half were mariners. Others were employed in ashore jobs, in the offshore oil drilling industry, tug operations, and related fields.

Some of the 20 or so maritime unions active in the early 1980s had already turned their recruitment efforts toward members of related professions. Only nine major unions had significant numbers of oceangoing mariners among their memberships. The two major unions representing unlicensed mariners are the National Maritime Union of America and Seafarers International Union of North America, usually referred to as NMU and SIU. Engineering personnel are represented by Marine Engineers Beneficial Association, District 1 and District 2. All maritime unions are affiliated with the AFL-CIO. However, just as MEBA districts and NMU and SIU compete with one another for members, so do other AFL-CIO affiliated unions. The complete list of unions is as follows:

AMP	Associated Maritime Officers' (Deck and Radio Officers)
ARA	American Radio Association
BMO	Brotherhood of Marine Officers' (Deck and Engineering)
GLLO	Great Lakes Licensed Officers'
ILA	Independent Longshoremen's Association
IND	Independent Employees Associations
LTPPA	Licensed Tugmen and Pilots Protective Association
MEBA 1	Marine Engineers' Beneficial Association, District No. 1
MEBA 2	Marine Engineers' Beneficial Association, District No. 2
MCS	Marine Cooks and Stewards (SIUNA)
MFU	Marine Firemen's Union
MMP	Masters, Mates and Pilots (Atlantic, Gulf, Pacific and Great Lakes)
MSO	Marine Staff Officers' (Pursers)

NMU	National Maritime Union of America (unlicensed)
ROU	Radio Officers' Union
SINUA	Seafarers International Union of North America
SOA	Staff Officers of America (Pursers)
SUP	Sailors' Union of the Pacific
UMD	United Marine Division, Local 333
USW	United Steel Workers, Local 5000

The nine major maritime unions representing oceangoing mariners include ARA, which negotiated a collective bargaining agreement for radio officers with steamship companies operating on the Atlantic, Gulf, and Pacific Coasts, and BMO, which represents both deck and engineering officers employed on freighters and tankers on the Atlantic and Gulf Coasts. MSO/SIUNA is the representative union for pursers, primarily on the Pacific Coast. The union also represents civil service mariners employed by MSC and other Federal agencies. SOA represents unlicensed personnel of the engine department of the Atlantic and Gulf Coasts.

MEBA 2 represents engineering and deck officers, primarily those employed on Great Lakes ships. MEBA 1 represents engineering officers industry wide on the Atlantic, Pacific, and Gulf Coasts, along with a few deck officer personnel. NMU represents unlicensed personnel on the Atlantic and Gulf Coast, covering about 7,000 jobs, while SIU acts in behalf of deck, engine, and stewards' department personnel in the same areas. Affiliated with SIU are MCS, SUP, and MFU.

Just as there has been a trend toward merger of liner companies, efforts intensified in the 1970s to merge various maritime unions. Some have taken place, but in late 1981, NMU and SIU still were seeking an agreement to merge the two largest maritime labor unions.

MARITIME MANAGEMENT ORGANIZATIONS

Maritime management also supports a number of management organizations that represent their interests such as the American Institute of Merchant Shipping, or AIMS. Founded in 1939, it now represents mainly tanker companies, serving in a public relations capacity, preparing and delivering testimony to congressional committees, and generally promoting common interests of the tanker operators. Originally, liner operators also were part of AIMS, but in 1978 they founded their own organization. The Council of American Flag Ship Operators (CASO), performs the same functions for liner companies as AIMS does for tanker management. Membership in both is open to all U.S. flag operators.

The American Maritime Association, or AMA, represents various unsubsidized shipping companies in labor bargaining with the unions. Once a pattern of settlement is established, individual companies ratify or reject recommended agreements. The Maritime Service Committees, or MSCs, also negotiate with unions in behalf of owners and operators of dry cargo vessels on the Atlantic and Gulf Coasts. Each member company must concur and sign a final agreement, but is not legally bound to do so. Another management association, the Tanker Service Committee (TSC), negotiates solely for member companies who own or operate tankers. It negotiates with MEBA, ARA, ROU, and NMU, with some TSC members being excepted because of their agreements with independent unions.

A final major management association, Pacific Maritime Association (or PMA), negotiates with MMP, MEBA, ARA, MSO, SUP, MCS, and MFU for steamship, terminal, and stevedoring companies. Separate negotiating units work out agreements for ashore-based members and those in seafaring jobs. Contracts made are binding on all member companies authorizing PMA to negotiate in their behalf.

The National Maritime Council is a promotional organization that brings together all segments of the maritime industry, as well as the Department of Transportation's Maritime Administration which is responsible for promoting the welfare of the U.S. maritime industry. The council seeks to encourage U.S. shippers to use U.S. flag ships and to promote overall interests of the industry through advertising and by providing speakers and films. It also represents the industry in contacts with officials and leaders of Government, business, and other institutions.

MARITIME TRAINING AND EDUCATION

The maritime unions also have allied themselves to assure a stronger voice in support of their interests. In many cases, "educational" organizations are funded by contributions from shipping companies having agreements with the unions and by the unions themselves—and, thus, represent both union and management interests. Typical is the Transportation Institute which lobbies for SIU-affiliated companies and that union. The Joint Maritime Congress exerts its influence in behalf of MEBA District 1 and District 2 and companies having agreements with those two unions. The NMU counterpart is the Labor Management Maritime Committee.

These organizations should not be confused with purely labor groups such as the AFL-CIO Maritime Trades Department, Metal Trades Department, or others, which represent strictly union interests. All maritime unions are affiliated with the AFL-CIO and have many common goals.

Maritime unions also are active in providing training opportunities for those seeking to enter the trade and to promote advancement of those who already hold seagoing jobs. Union schools generally are operated through cooperative arrangements between the unions and the companies who employ their graduates.

The MMP-sponsored Maritime Institute of Technology and Graduate Studies in Linthicum Heights, Md., offers training for beginning deck officers and advanced training for upgrading of those already licensed by the Coast Guard. In the late 1970s and early 1980s, most students were enrolled in advanced courses to upgrade their licenses. With job billets declining, demand for ship officers could be filled by state and Federal maritime academies. There were few openings for new unlicensed personnel.

Training for both deck and engineering officers is offered by MEBA District 2 and AMO Schools for Engineering and Navigation in Florida, Toledo, and Brooklyn. MEBA District 1 operates the Calhoun MEBA Engineering School in Baltimore, Md. An MFU-sponsored school for marine firemen, oilers, and watertenders is located in San Francisco, while the American Radio Association and Radio Officers Unions offer training in that field in a school located in New York City.

Training for unlicensed mariners is provided by the NMU school, also in New York, and the SIU school at Piney Point, Md. These schools, too, in the late 1970s and early 1980s, devoted much of their effort to upgrade training, although SIU did admit students seeking entry into the seafaring profession.

Most union schools have first-rate facilities, many of them comparable to small college campuses. Emphasis is on vocational training although high school equivalency courses are offered at many, along with remedial reading and writing courses. Shipboard management also is featured. Shipping companies cooperate in providing modern training aids. Fully equipped shops offer realistic training opportunities for students attending union schools. Tuition is almost always free and, in many instances, students receive a small salary while taking courses. Many courses provide a combination of classroom and at-sea training. Overall thrust of union training is toward providing skilled mariners for the industry and assuring that active mariners have opportunity to upgrade those skills and, thus, enhance their seafaring careers.

Government also is active in training. A federally funded U.S. Merchant Marine Academy is located at Kings Point, N.Y., and is operated by the Maritime Administration. Kings Point offers a 4-year course leading to a BS degree. Graduates receive U.S. Coast Guard licenses as ships' officers in deck or engineering departments (sometimes both). Most are commissioned in the Naval Reserve, and many go on active duty with the Navy or the Coast Guard.

Tuition is free at the Federal academy for the more than 1,000 students. They are all nominated for appointment by Members of Congress, as are those aspiring to attend military service academies. In 1980 approximately 85 percent of the graduates of the maritime academy found employment aboard commercial or MSC ships, or were commissioned in the Navy or Coast Guard.

In addition to funding and controlling the Federal Maritime Academy, the Maritime

Administration helps provide firefighting training for mariners in conjunction with Military Sealift Command, Atlantic. It has a radar training center in New Orleans, New York City, San Francisco, Toledo, and Seattle.

The Maritime Administration also is responsible for financial aid given six state maritime academies. Funding is used for tuition assistance and for operation of the state-controlled maritime schools. States that operate their own maritime academies include New York, Maine, California, Massachusetts, Michigan, and Texas. More than 700 midshipmen graduated from the six schools in 1980. About 65 percent found seagoing employment or went on active duty with the Navy or Coast Guard. Many senior officers in those organizations are graduates of maritime academies rather than of a service academy.

While many shipping companies, unions, labor-management associations, trade associations, and training schools have been mentioned by name, there are many others. There are unions, for example, that enroll longshoremen, operators of inland barges, ship's pilots, those employees in the offshore oil industry, and employees of the 27 shipyards active in the United States at the turn of the decade. Trade associations representing these groups exert considerable influence on the formulation of national maritime policy and the implementation of maritime-focused programs.

SHIPBUILDING AND OTHER MARITIME INDUSTRY ELEMENTS

As has been noted, the maritime industry is made up of diverse elements with equally diverse interests that often do not coincide. Shipbuilding offers one example. In 1980 American shipyards turned out only 16 new merchant ships, 8 of which were subsidized by the Federal Government. Eight of the 27 yards specialized in ship repair work. Maritime Administration figures released in 1980 indicated that only 1 of the 19 remaining yards had orders extending into 1982. None had orders that would provide work in 1983. Cost of building ships in U.S. yards is significantly higher than in foreign yards, hence their lack of worldwide competitiveness. U.S. yards face a tremendous challenge in the 1980s, dependent as they are on repair and overhaul work, and construction of Navy fleet ships envisioned as part of a buildup of the Navy combatant fleet.

In past years legislation was sought and passed which prohibited use of foreign-built ships in the domestic or coastal trade. Ships built in foreign yards were not eligible for construction subsidies. Legislation on the books already requires that some cargo, particularly Government cargo, be carried in U.S. flag ships. (See chapter 5.) There have been serious attempts to reserve a percentage of U.S. import-export trade for U.S. flag ships, one bill having been passed only to be vetoed by former-President Gerald Ford.

The advent of intermodalism has created other problems, those affecting port areas, longshoremen, or other elements of the industry. There have been, for example, a series of court battles and hearings before regulatory agencies concerning the right of longshoremen to stuff or discharge containers in the port areas. Agreements negotiated with management allowed them to unload and then load any container that originated within 50 miles of the port in which they worked. The agreements protected jobs by creating work. They also increased cost of container movements and negated advantages gained by supplier-to-user shipment of cargo in a container which minimizes damage or loss of cargo and reduces cargo-handling costs. Eventually, courts ruled that such agreements were not legally substantiated. Nevertheless, the battle to protect longshoremen jobs continues.

Jobs and port-generated revenue are lost in other ways. Container ships, for example, make fewer port stops than breakbulk-type ships. Containers are consolidated at major ports, moving by rail or truck. The process is repeated at the destination end of the intermodal supply line. The result is that many ports, such as Philadelphia, have lost business. The impact is felt throughout other port areas. Thus, local authorities have filed suits in the courts claiming that intermodal systems, use of rail land-bridges to ship cargo over land between major ports, and other technological advancements have deprived those ports of cargo that is traditionally and rightfully theirs. Those suits have had only limited—and temporary—success. Obviously, use of large, fast, highly specialized ships integral to an intermodal system

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that incorporates rail and truck legs will continue to expand.

Small as it is, the maritime industry is complex. It affects all our social institutions, particularly business and Government. Ultimately, its impact is felt by each American family since availability of items used and consumed, and their cost, are significantly affected by transportation. A thorough and objective assessment of the entire industry is difficult. This judgment is supported by the continuing inability of Congress to establish an integrated, coherent, specific national maritime policy. There are few, if any, common goals that can attract industrywide support.

FACTORS AFFECTING THE MARITIME INDUSTRY

To this point, this chapter has focused on shipping industry "players" and the roles they play. It has summarized assets available and noted key industry trends. But, the "stage" on which those "players" perform also is important. To understand the "plot" in the unfolding drama of the U.S. maritime industry, one should be aware of some of the many factors that influence industry stability, or lack of it, and that encourage or discourage industry growth. These factors ultimately determine whether the commercial maritime industry can be capable of providing sealift services and resources needed by the nation's military establishment to logistically support troops deployed in any major emergency.

In his book *The Business of Shipping*, Lane Kendall said that "in modern civilization, ships are the essential element that unite all nations into one vast and mutually dependent community." That statement obviously is true if one reflects on world history. It is true even though the world has become a single unit with development of ocean-spanning aircraft, instantaneous worldwide communication, and space-probing rockets. The Phoenicians, the Romans, and civilizations before them used ships to carry their trade, as well as for exploration and the projection of their military forces. Columbus discovered a New World with new riches waiting to be tapped, and trade with the Old World soon flourished. Vasco de Gama rounded the Cape of Good Hope in 1498 and thereby brought about a realignment of trade routes to India. Magellan's circumnavigation of the globe, completed in 1522, proved that the Earth is round, and that voyages to every land were practicable. The opening of the Suez and Panama Canals had great impact on ocean trade, as did the temporary closing of the Suez during a crisis in the Middle East.

TRADE ROUTES

An ocean trade route links nations but is not comparable to a highway (figure 4-16). It is not a mapped track or trail that ships follow, but rather the total of hundreds of ship voyages between specific geographic areas. Routes are determined, of course, by weather conditions. Most important of all are cargo availability and demand for commodities that make up that cargo. Based on the Merchant Marine Act of 1936, the Maritime Administration determines the routes that are considered essential to U.S. trade. U.S. ships that provide service on those routes are eligible for operating and construction differential subsidies and other forms of Federal aid or assistance.

Although there are literally thousands of trade routes, U.S. import-export trade is primarily between the United States and about 20 geographical areas. Eight major routes serve those areas. They are the North Atlantic, North Pacific, South Pacific, Suez Canal, Caribbean Sea, European-East Coast of South America, South American, and South African routes.

Types of cargo carried can be categorized as raw materials (oil, ores, coal, and the like) and as general cargo. The latter refers to all types of dry cargo not classifiable as ore, coal, or grain and includes primarily fabricated, processed, or manufactured goods. They are carried in container ships, barge carriers, and breakbulk ships with some types lifted in dry bulk ships. Raw materials are lifted in dry bulk ships including combination carriers such as the OBO, or oil-bulk-ore, ship. Liquid bulk cargo is carried in tankers.

THE MARKETS

Economists generally have predicted that world trade tonnages moving over the oceans will

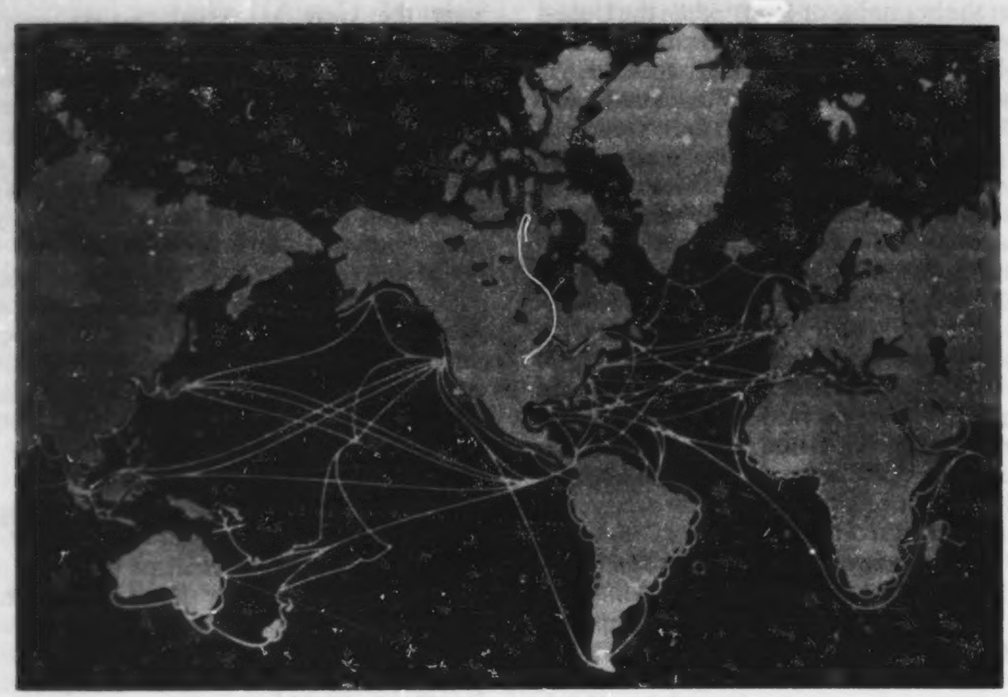

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Figure 4-16.—Shipping routes.

increase about 5 percent a year throughout the 1980s. The world population of 4.5 billion at the beginning of the 1980s should total more than 7 billion by the year 2000, if not before. In their book, *Shipping—How It Works*, Rinman and Linden said 7 of every 10 people lived in the developing countries in 1977. Only 2 of the 10 lived in industrialized western nations, and only 1 of the 10 lived in a Communist European country. Farm production is greatest in Europe and North America. Population increases, which will require more and more grains and foodstuff, are greatest in South America, Africa, the Middle East, and Asia. The industrialized nations which have surpluses of farm products also have most of the world's raw materials. The United States, for example, has the richest coal deposits among world nations.

Historically, industrial nations have traded primarily among themselves, while developing nations provided raw materials and luxury-type foodstuffs such as coffee, cocoa, bananas, sugar, and other items from Latin American nations; tin from Bolivia; cotton from Chad; and meat from Argentina. Ships have opened borders of nations within the world community. Ships have made possible the development of Third World nations. It is ships that will continue to play a major role in the distribution of natural resources and manufactured products throughout the world community.

U.S. MERCHANT FLEET TRADE

The U.S. merchant fleet at the beginning of the decade ranged 8th among world fleets in deadweight tonnage, and 11th in number of ships. In terms of average deadweight tonnage, U.S. ships were in fifth place. When compared to the Soviet Union, the most prolific of possible adversaries, the United States is far behind in ship numbers. The USSR ranked second with 2,512 ships (at the beginning of 1980), while the United States was 11th with 569 privately owned merchant ships. In deadweight tonnage, however, the U.S. ranked ninth, less than a million tons behind the USSR. By and large, the U.S. fleet is modern, highly productive, and competitive in carriage of dry cargo in world liner service. However, it is unable to carry any significant volume of U.S. liquid and dry bulk trade.

In 1979 when total U.S. oceanborne commerce was 823.1 million tons and liners carried 57 percent of that total, U.S. flag liners carried 27.5 percent. U.S. tankers carried approximately 3 percent of U.S. energy imports in 1980, with dry bulk ships carrying less than 1 percent of U.S. trade. To a great extent, the United States has become a maritime-dependent nation, relying on merchant ships flying flags of other nations for carriage of its world trade.

U.S. oceanborne trade totals dropped slightly in 1980 from 823.1 to 770 million tons. Total tanker trade reflected declining oil imports, slipping from 423.4 million tons in 1979 to 353 million in 1980. Total value of U.S. oceanborne trade in 1979 was more than $240 billion, and probably surpassed $330 billion in 1980. Those figures do not include Department of Defense cargo which is particularly desirable to American carriers. That is especially so on return legs where ships often sail in ballast since cargo headed in that direction is limited. Very few trade routes offer a comparable flow of cargo in both directions.

Some idea of the contribution MSC makes to the industry's well-being is provided by the $1.2 billion MSC paid to private industry for services rendered the command in 1980. That was nearly 75 percent of the total cost of MSC operations. More than 84 percent of petroleum products delivered for the military moved in privately owned ships, as did 97 percent of all military dry cargo.

CARGO TARIFFS

Just as MSC charges the services it supports at Department of Defense-approved shipping rates, commercial industry establishes rates for each of the trade routes and for types of commodities carried. Rate wars have occurred over the years as varied carriers sought to dominate trade routes and to drive out competition. While international law assures free navigation of the world seas and establishes international procedures which are almost universally accepted, no one can set international rates. Given nationalistic forces at work in today's world, it is improbable that such an agreement could be negotiated—even if it were desirable.

However, a system of conferences has emerged over the years which provides a means of setting and enforcing tariffs for routes by commodities. A conference is a voluntary association of steamship companies engaged in a common trade. Its purpose is to stabilize competition by establishing freight rates for that trade. Participants in a conference sacrifice some of their competitive flexibility, or their right to operate independently, for the equilateral protection that flows from mutual agreements they may make. A conference not only tends to prevent the stronger lines from seeking to drive out the weaker carriers by temporary reductions in rates, but also provides some assurance of continuing service for the shippers. Without the conference system, there could well be trade routes on which no service is provided, or where one carrier has gained a monopoly by driving off the competition.

Since conferences negotiate rates with the shippers and set terms which must be followed by carriers in the particular conference, there is considerable room for abuse. In the early 20th century, conferences offered deferred rebates to shippers—rebates for which shippers were disqualified if they used tramp or nonconference ships to move their cargo. Thus, the shippers were captives of the conference. Such monopolistic practices are, of course, contrary to U.S. support of free enterprise and in opposition to monopolistic policies.

The Shipping Act of 1916 was passed to resolve that problem. It required that all carriers carrying U.S. trade file rates with what is now the Federal Maritime Commission. The Commission reviews the rates and the terms of conference agreements and grants conference participants immunity from U.S. antitrust statutes. The Act, in effect, legalized the conference system that would otherwise have been outlawed since it violates U.S. antitrust laws. However, the FMC cannot establish or change rates; these are actions the conferences must take. If found to be unfair or discriminatory by the Commission, ocean rates must be changed by the conference if its carriers are to be allowed to participate in U.S. trade.

There are two basic types of conferences, the open conference and the closed conference. Membership in the first is open to all who wish to join. A closed conference allows only selected carriers to participate. All conferences have a right to expel carriers who violate conference rules, and carriers can resign from a conference if they wish to do so. While membership is strictly voluntary, most carriers participate, since conferences tend to equalize trade-route competition, provide a structure for the division of cargo, and serve common interests in other ways.

CARGO PREFERENCE MEASURES

Allocation of cargo, or reserving a share of cargo for a nation's own carriers, sometimes appears desirable. Some nations have done so. However, the practice opens a door for retaliation by other nations that could be destructive in the long run. Philosophical differences are frequent and continuing. In the United States, for example, the Departments of State and Justice frequently have been critical of the merchant marine and those in industry, Congress, and other Government agencies who seek cargo preference legislation, further exemption from antitrust laws, allocation of cargo by flag or carrier, or preferential treatment of some type. Such actions, they argue, are contrary to American values and traditions which espouse free competition. Proponents of restrictive legislation argue that it is necessary to maintain a viable merchant marine needed for economic and national security. The United Nations has been active in pushing the UNCTAD code, an agreement that would allocate 40 percent of each nation's own cargo to ships flying its flag, 40 percent to the trading partner, and 20 percent to ships of other nations. Thus, in trade between the USSR and United States, each of the two trading partners would be assured 40 percent, with 20 percent available to ships of other nations.

Another protectionist approach is by bilateral agreement between trading partners with certain percentages of the trade between two nations reserved for their own ships. Multilateral agreements among groups of nations accomplish the same result. The latter are particularly useful for developing nations lacking capital for investment in their own industry. Bilateral agreements, such as one between the USSR and United States for delivery of grain and a similar U.S. agreement with the People's Republic of China in 1980, are examples of those that benefit major trading partners. Those agreements called for grain cargoes to be split three ways, with one-third going to each of the two trading partners and one-third to merchant fleets of other countries. In the 1980s, bilateral talks were held by the United States with the USSR, China, Brazil, Argentina, and other nations.

Attempts have failed to legislatively require that specific percentages of U.S. trade be carried in U.S. flag ships. These failures have come about either by legislative inaction or Presidential veto. Laws and agreements currently in effect require that most Government cargo be moved in U.S. flag ships. Included are military cargo, agricultural products, and foreign aid that must be carried in U.S. ships, if available. Details of preferential cargo programs are provided in chapter 5.

Most important of the many factors that influence capability of the U.S. ocean-shipping industry is the availability of cargo. A second factor is the competitiveness of U.S. ships in relation to other merchant fleets, some of which are state-owned and others like that of the United States, privately owned. State ownership obviously makes it more certain that a merchant marine, such as that operated by the USSR, will be capable of supporting national objectives of the country it represents.

However, there is another highly influential factor. Since World War II, the worldwide maritime industry has become a highly capital intensive industry. Competition demands greater productivity. Higher productivity is gained from larger, faster, and more highly specialized ships and support systems.

Examples of technological advancements in the shipping industry are the container ships, the barge carriers, the very large crude carriers that deliver millions of barrels of oil in a single voyage, and liquefied natural gas ships. Roll-on/roll-off ships are another example, as are integrated tug and barge systems. Computers are incorporated into navigation systems, and engine rooms of some new ships are automated.

Launching of a maritime satellite system has moved oceangoing ships from the era of the Morse code into the space age. Industry, however, has been much slower than MSC to install satellite communications systems aboard oceangoing ships, primarily because of the cost. However, most of the ships MSC charters from industry have satellite communications and can be diverted quickly in an emergency. The very nature of the industry will require eventual installation of satellite communications.

CARGO DOCUMENTATION

Intermodalism is one reason that ship-to-shore communication will continue to be modernized. To reap maximum benefits from intermodal delivery, both shipper and supplier must be kept informed as to the status of cargo. Movement of each box and the cargo it carries must be documented as it moves through the distribution system. That means expanded use of automatic data processing (ADP) systems.

ADP systems or services are used by most carriers, even those operating only one or two ships. As more and more data are available, their timely transmission becomes a problem that can be resolved only if instantaneous communications systems are available. A prevalent industry practice is the leasing of ADP systems, just as the carriers now lease containers, trailers, and chassis. Carriers simply cannot afford the tremendous investment needed to acquire assets. Even if they could, leasing offers financial advantages not available by capital investment.

SUBSIDIES

Federal payment of subsidies to partially offset operating and construction costs of U.S. flag ships has been a longtime practice. In the late 1970s and in the early 1980s, their value sometimes was questioned, but never seriously debated. It is ironic that the few carriers who have not received subsidies have been those most successful in competing with other world carriers. But, both the "fittest" and the nonfit survive. There is no doubt that subsidies tend to protect the weaker and poorly managed ship operating companies, just as they protect U.S. shipyards who have not been able to compete with foreign yards on an even basis.

As mentioned earlier, few new ships were built in U.S. yards during the late 1970s and early 1980s. The number of carriers requesting construction subsidies was so limited that funds in the Maritime Administration budget could not be spent. As a result, Congress began reducing the amount of money authorized for construction subsidies.

In Fiscal Year 1980, the Maritime Administration paid out only $2.5 million in subsidies for the reconstruction of seven existing vessels. Total amount of the work on the seven ships was $6.8 million. No new construction differential subsidy contracts were awarded by the Maritime Administration in 1980. However, contracts were consummated by the private sector for the building of 15 new ships, and 17 ships were still under construction with the aid of previously awarded subsidy contracts.

Under the provisions of Title XI of the Merchant Marine Act of 1936, the Federal Government guarantees payment of loans on ships, barges, and other equipment secured by industry organizations. Federal liability for Title XI guarantees in late 1980 exceeded $7.2 billion. Another $4.3 billion in loan guarantees was pending. Title XI loan guarantees in effect covered 262 ships, more than 2,500 drilling rigs, tugs, miscellaneous vessels, and 2,000 shipboard barges or lighters.

An additional source of assistance provided the maritime industry by statute, in this case the Merchant Marine Act of 1970, is the capital construction fund. It allows ship owners or operators to deposit money in capital construction fund accounts and to defer paying taxes on the amount deposited. Carriers indicated their intention to use that capital for construction of new ships and have a plan approved by the Maritime Administration. Since inception of the program in 1970, carriers deposited more than $2 billion in such accounts, with $322 million deposited in fiscal 1980. Approximately $1.6 billion had been withdrawn and invested in modernization of the merchant fleet.

For owners of ships operating in inland waterways and coastal trade, a comparable program is available. Capital deposited in the construction reserve fund must be reinvested in a new vessel within 3 years. Until that time, taxes on capital set aside are deferred. Carriers also can trade in ships they operate to the Maritime Administration, receiving credit for their trade-ins against new construction of ships. The trade-in program is authorized by Section 510 of the Merchant Marine Act of 1936. During fiscal 1980, a single carrier traded in eight of its vessels. The carrier then negotiated a lease-hire arrangement with the Maritime Administration that allowed it to use the ships until new ones on order were available. This program provides considerable flexibility for carriers seeking to modernize their fleets.

Just as the Maritime Administration represents industry and the Government in negotiating bilateral and multilateral agreements such as those with the Soviet Union for carriage of grain and with China for sharing U.S.-China trade, the Federal agency is active in encouraging port development, in marketing efforts to increase cargo available to the industry, in research and development, and in energy conservation programs.

The agency shares the cost and participates with industry in a wide variety of studies and planning efforts aimed at upgrading U.S. ports. Recent studies include those designed to expand or improve coal-handling ports, with development of master plans concerning port technology, transportation, coastal zone management, telecommunications, trade, tourism, municipal services, and energy. The agency's port development role is literally an across-the-board effort.

The industry relies on Maritime Administration marketing programs aimed at increasing U.S. flag tonnage of the nation's oceanborne foreign trade. It is perhaps the only industry that has a Federal agency solely responsible for promoting its welfare. Based on voluntary reports from shippers and carriers between 1973 and 1980, more than $160 million in freight revenues was generated by the Maritime Administration marketing program. A shipper information system provides trade intelligence on U.S. shippers and commodities gathered through marketing contacts and interviews by agency specialists in nine geographical regions. Another market lead system identified more than 2,200 business opportunities for U.S. flag ship operators in fiscal 1980. The agency conducts seminars for industry and for shippers, funds studies, and produces a number of reports and publications containing data useful to industry organizations. Both short-term and long-range market analyses and forecasts are published for maritime industry use.

Included in market development functions performed by the Maritime Administration for the industry are monitoring of preference cargo available under Federal statutes. The agency monitors the shipping activities of 67 other Federal agencies to assure cargo is made available to the privately owned carriers. Agencies monitored include the Export-Import Bank, Agency for International Development, the Department of Defense, and the Department of Energy which sponsors the Strategic Petroleum Reserve Program to store oil in underground salt domes as a reserve. Also monitored are the military assistance and foreign military sales programs which provide aid to foreign governments. Others shipping ocean cargo include the Departments of State, Justice, Health and Human Services, Agriculture, and Commerce.

Federal support of research and development programs designed to assist the maritime industry is extensive. In fiscal 1980, the Maritime Administration expended $18.5 million in R&D efforts, slightly more than a half million of which was obligated for projects on the Great Lakes. Typical projects in 1980 included one to determine how robots can be used to perform welding tasks in shipyards as they already do in the auto industry. Another federally funded project was aimed at reducing industry dependence on solvent-based coatings for ships since they produce environmental problems. Also studied were ways to make sandblasting safer or to replace it with another method. Other projects focused on the development of shipbuilding standards that would simplify ship construction and reduce overall costs.

Among more publicized agency-funded projects are studies to determine if sails can be used to drive cargo ships, thus reducing energy costs, and to evaluate the feasibility of delivering natural gas or crude oil from Alaska to the Continental United States in cargo submarines. The submarine tankers could function under the ice, cutting voyage distance and time. By the early 1980s, that possibility was being somewhat seriously considered as a competitive alternative to the Soviet supply of European nations with natural gas by an overland pipeline from Siberian fields.

Efforts have been made to improve air circulation in ships' containers, to design structures that can be fitted into container ship cells and allow the lift of jumbo-size military equipment in that type of ship, and in communications using radio waves of very low amplitude.

New ship designs being worked on by the Maritime Agency in conjunction with private industry in the 1980s included standardized dry bulk carriers, multipurpose ships with high potential for military use, and ship platforms that can be used for industrial purposes. Typical are the use of ships as power plants harnessing the energy of the ocean's thermoclines and ships designed for disposal of trash that cannot be handled safely ashore. Studies were made of improved ship hull configurations, environmental problems such as use of asbestos or lead-based paints, waste receptors, and improved cargo pumping systems.

DIESEL PROPULSION

Of the 45 ships under order at the end of fiscal 1980, 32 were to be equipped with diesel propulsion plants when complete. There has been a significant trend in industry toward the use of diesel engines since they cost less to operate and are more reliable. Training now is provided at the U.S. Merchant Marine Academy and at state-supported maritime academies to assure that diesel engineers are available. Much industry-federal effort is devoted to pollution control—to meeting standards for tankers set by the Port and Tanker Safety Act of 1978.

The Sea-Land SL-7s (figure 4-17) the Navy has acquired were taken out of service and replaced by diesel-driven container ships that cost less to operate. MSC has installed diesels in several of its ships while they were in yards for general overhaul. The use of diesels in privately owned U.S. flag ships has increased.

Despite the fact that they rely to a great extent on the Federal Government for marketing, promotion, R&D, energy conservation, and other assistance programs, private sector organizations are responsible for many of the major accomplishments in these areas. The designs for the Seabee, for example, were created by Lykes Brothers and Frank Nemec. Jerome Goldman is credited with formulation of the LASH concept and designs of that barge carrier. LNG ships, VLCCs and designs for container ships, roll-on/roll-off carriers, and other ships are the products of privately owned shipyards, not Government agencies. Sun Shipbuilding has been particularly active in RO/RO development.

Competition has been a major reason for industry achievements. While working cooperatively with Government and one another in many areas, it is nevertheless still true that the carriers likely to move ahead in the competition for world trade cargo are those that can provide better, more reliable service at lower cost. There is strong rivalry among various elements of the industry. That is both a strength and a weakness. But Federal assistance also is simultaneously an advantage and a disadvantage for the maritime industry. Aid and support the Government provides can be balanced out by regulations and restrictions that are inherent to Government involvement.

Perhaps the best description of the situation that prevails with regard to the private sector maritime industry and Government's role in assuring the stability of that industry is contained in a phrase popular in the vernacular of the youth of the 1980s—"They need to get their act together."

Steps are being made in that direction. Some trends are discernible and could result in a stronger maritime industry. Included are:

1. The push toward diesel propulsion of new ships, thus reducing energy consumption.
2. Development of new ship types such as cargo-carrying submarines or high-speed cargo carriers that operate on the surface.
3. A thrust toward expansion of multilateral agreements that include United States participation.
4. Worldwide support for adoption of the UNCTAD Code.
5. Updating the Shipping Act of 1916 which concerns shipping conferences and provides antitrust immunity to conference participants.

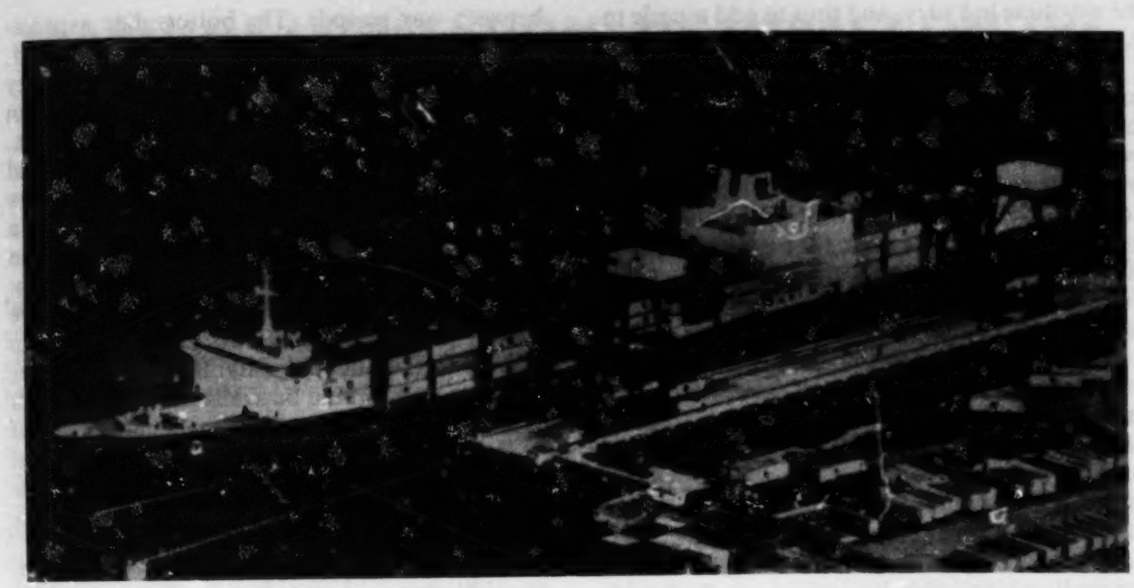

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Figure 4-17.—An SL-7 being loaded. The Navy (MSC) has acquired several of the ships in which diesel engines are being installed.

6. Updating of authority assigned to the Federal Maritime Commission, the regulatory agency for maritime affairs. (See chapter 7.)
7. Establishment of shippers' councils to provide shippers with a means of negotiating rates with conferences or carriers, thus providing greater leverage in their negotiations.
8. Changes in legislation to require that a percentage of U.S. dry bulk cargo move in U.S. flag ships.
9. Changes in legislation to require that a percentage of liquid bulk cargo move in U.S. flag ships. Passage is considered unlikely in the near future.
10. Providing tax advantages to shippers who use U.S. flag vessels, perhaps through some form of tax credit.
11. Already completed transfer of responsibility for the Maritime Administration from the Department of Commerce to the Department of Transportation, thus providing for inclusion of the maritime industry in overall U.S. transportation policy development.

No matter what the future may bring, the mid- and late 1980s are certain to be critical years for the U.S. maritime industry. Its very survival may be determined by that time because, if the U.S. merchant fleet is not able to compete successfully on the world's oceans, its chance of long-term survival is diminished.

SUMMARY

The U.S. maritime industry is relatively small. It has, however, tremendous influence on United States achievement of its economic and national security objectives. Without a strong merchant marine and an equally strong maritime industry, there is doubt that some of those objectives can be fulfilled.

The maritime industry is made up of diverse elements with equally diverse interests. Included are the ship owners and operators, the shipyards, the maritime unions and their members, the maritime training institutions, the suppliers, the freight forwarders and the shippers themselves. Because their objectives are frequently in conflict, there is something less than a consensus of opinion as to what needs to be done to strengthen the maritime industry, and thus to add muscle to American seapower.

American shipyards are not competitive with foreign yards. Their lack of long-term orders makes it difficult for them to retain skilled workers. The oceangoing maritime work force is greater than the number of jobs available, a situation which has led to labor-management agreements that create work for a greater number of people, but which also increases labor costs. Nevertheless, there are the primary means of assuring availability of skilled mariners who would be needed to crew merchant ships activated from reserve fleets in a military emergency. The composition of the U.S. seafaring work force is also a problem since it consists of persons more than 50 years old and relative newcomers to the seafaring profession. The younger group is difficult to retain since modern ships designed for fast turnaround and maximum time at sea result in seagoing jobs being less attractive. Seafarers take jobs ashore. The result is that the maritime work force faces block obsolescence unless current trends are changed.

The active merchant fleet is relatively small. However, the United States has pioneered the use of the container ships, barge carriers, and other specialized vessels. New ships are highly productive. Ships in the U.S. fleet are larger than the world average, and their payload capacity is high in trade operations. However, because of their specialized nature, many ships in the U.S. merchant fleet are less than ideal for military support in the initial phases of an emergency where ports and port facilities may be lacking.

Despite considerable progress in the development of mutual understanding between industry and the Department of Defense in the early 1980s, considerable doubt remains as to the role industry is expected to play in national security. Programs designed to assure industry augmentation of the military services are, by and large, poorly conceived and not well understood. In essence, the situation that prevailed at the turn of the decade of the 1980s was not much different from in other between-war periods. The bottom line expectation seemed to be that if an emergency occurred, things would be worked out successfully as they had been in World Wars I and II, in the Korean crisis, and the subsequent war in Southeast Asia.

No matter how one looks at the numbers and types of ships available for the maritime industry for augmentation of the military services in a major emergency, they are not adequate. Given an emergency where heavy losses of merchant ships are likely, as in World War II, the picture is even less encouraging. Construction of ship replacements would be costly. It may well require more time than would be available. That problem is covered in greater detail in chapter 12. Its resolution depends to a great extent on what industry and Government can do—and are willing to do—to strengthen the U.S. maritime industry.

There is little question about what is needed. The role of the private sector maritime industry ought to be made clear. However, that is not the case. If the industry is expected to be competitive with other merchant fleets in peacetime and to provide the resources needed for logistical support of deployed military forces in wartime, changes are needed. Necessary changes include identifying the number of ships in operation, the type of ships that are to be available, and determining the manner in which they will be managed and regulated in peacetime and in an emergency. At the heart of all industry problems, and those laid at their door by outside sources, is the degree to which the United States is prepared to support its merchant fleet as an indispensable element of U.S. seapower. There is no question but that the support required will be costly. But there seems to be some question of whether the United States needs a strong, available, reliable merchant fleet to protect its interests. Even the most casual student of world history and reader of current news should know that there is only one answer—the U.S. maritime industry and merchant fleet are indeed critical to the United States well being and vital to its survival.

CHAPTER 5

MARITIME LEGISLATION: ITS IMPACT ON THE MERCHANT MARINE AND MILITARY SEALIFT COMMAND OPERATIONS

Something old, something new, something borrowed and something blue. That advice to soon-to-be brides succinctly describes both maritime policy and maritime legislation. Much of the legislation passed in the more than two centuries since the United States came into being is still on the books. Efforts to update a vast body of maritime law, however, are continuing and borrow liberally from international maritime law. Finally, it is no exaggeration to say that most of the U.S. maritime legislation that has been enacted into law was to help combat the economic "blues" of an industry which had been subjected to wartime peaks of growth followed by long-term peacetime declines in size.

And yet, dependence of the United States on ships to move a major percentage of its import and export trade has not diminished. In terms of volume it has increased substantially. The major ill that has sapped the industry's vitality is that more than 95 percent of overall U.S. import-export cargo moves in foreign flag ships.

During the revolution, the Continental Army commissioned the schooner *Hannah* in 1775 (figure 5-1). Less than 6 weeks later, on October 12, 1775, the Continental Congress formally established a Navy. After the Revolution, however, the Navy was demobilized—not to be authorized again until 1794 when pirates and foreign navies took their toll of American merchant ships and their crews.

In the period from 1789 to 1794, the size of the United States merchant fleet tripled. Its carriage of U.S. imports and exports averaged about 90 percent. But that growth was sparked by the availability of cargo and declining competition as the result of French-English wars. Often, American ships were the only ones available to shippers. During the War of 1812, when the United States earned its spurs as a legitimate world seapower, the U.S. merchant marine flourished as more than 1,000 merchant ships served as privateers.

Treaties with Japan and China opened new markets for oceanborne trade in the mid-19th century. But technological changes were being made that ultimately would diminish the competitive ability of the U.S. merchant marine and send it on a long downward trend. Chief among these changes was the building of large and fast new ships from steel. The United States lacked plants to produce the steel needed for ship construction and investment capital required to build them was heavily committed to the expansion of railroads as the fledgling nation pushed its borders westward. In addition, the United States was slow to grasp the benefits of steam propulsion over sail.

LEGISLATIVE ACTIONS

The first of a long series of Acts to stimulate the growth of the merchant marine and protect it from foreign competition was the Cabotage Law of 1817. It prohibited foreign ships from participating in the carriage of U.S. trade in domestic or coastal waters of the United States.

Congress also passed the Reciprocity Act of 1828 which offered to remove all barriers against foreign flag ships participating in U.S. international trade if those countries accorded U.S. flag ships equal opportunity to participate in carriage of their trade. Other legislation, in 1845, authorized the Postmaster General to grant mail contracts to companies operating U.S. flag steamships which could be converted to warships when needed. That was the first step toward offering some form of subsidy to companies operating

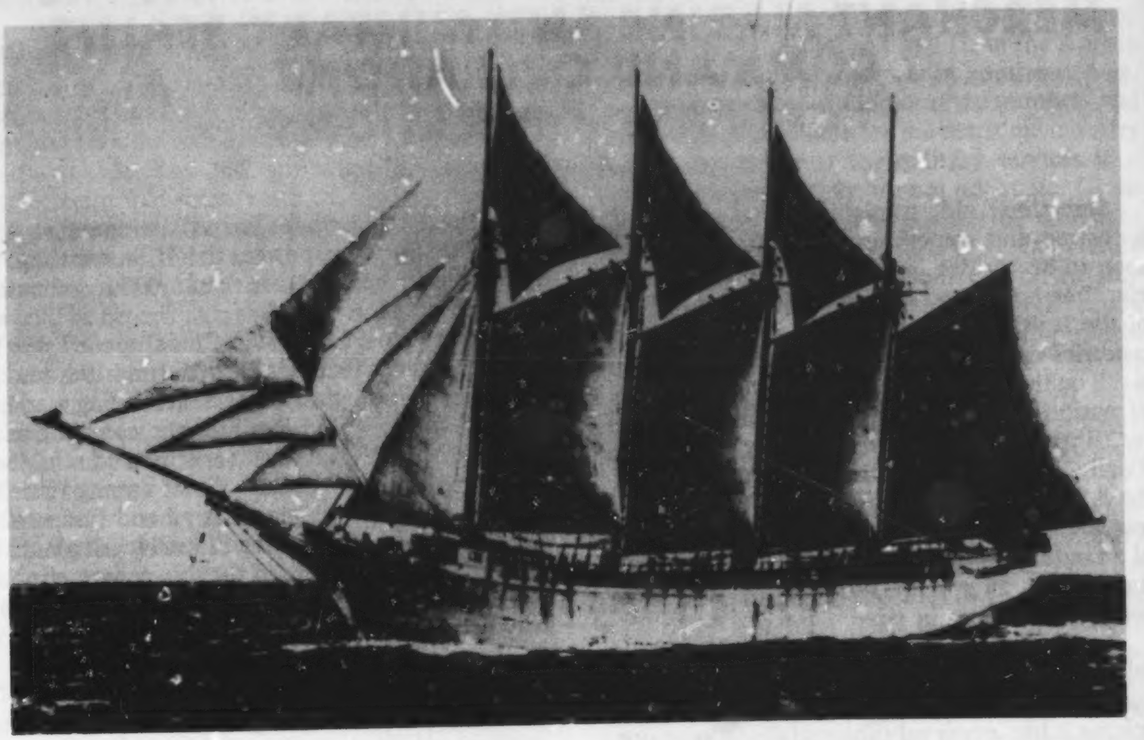

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Figure 5-1.—A typical schooner during the American Revolution.

merchant ships to assure their availability for military support in times of emergency.

Additional legislation in the mid-1800s encouraged the opening of steamship routes between the United States and Cuba, Panama, and various European ports.

The Subsidy Act of 1891 offered mail contracts to carriers operating high speed, U.S. flag ships. The effect of that subsidy, however, was more symbolic than real for the U.S. maritime industry.

More important was the Military Transportation Act of 1904. It required that U.S. flag ships must be used to transport supplies and equipment for the military services. That act is explained in more detail later in this chapter, as is other legislation that applies to MSC sealift operations.

MERCHANT MARINE ACTS OF 1920 AND 1936

Landmark maritime legislation passed in 1920 established initial U.S. policy for the merchant marine, and provided a basis for almost all maritime legislation subsequently recommended or enacted. The Merchant Marine Act of 1920 was passed primarily to facilitate the sale of surplus U.S. merchant ships—ships built during World War I but not needed for the carriage of peacetime cargo.

The 1920 Act protected U.S. flag carriers from foreign discrimination and again set forth a policy of reserving U.S. coastal trade for U.S.-built, U.S. flag ships manned and owned by United States citizens. When ships were owned by a corporation, the Act required that 75 percent of the stock of that corporation be held by United States citizens.

The Act set forth a national policy for the U.S. merchant marine, a policy which has never been changed in substance, and which is contained in the following language:

> "It is necessary for the national defense and for the proper growth of the foreign and domestic commerce that the United States shall have a merchant marine of the best equipped and most suitable type of vessels sufficient to carry the greater portion of its commerce and serve as a naval or military auxiliary in time of war or national emergency, ultimately to be owned and operated privately by citizens of the United States."

Since responsibility for maintenance of a strong merchant marine has been that of private industry, the military services have had little peacetime involvement in either establishing their own merchant ship requirements, in terms of types and numbers, or in providing funding other than by moving military cargo in privately owned ships. But neither has the military attempted to develop its own sealift force, choosing instead to rely on the privately owned merchant marine.

The Federal Government has provided subsidies in varying forms, including direct payments to compensate carriers for differences in the cost between construction of ships in the United States rather than foreign yards, and differences in the cost of operating ships with U.S. mariners who, over the years, were paid more than foreign seamen. Through the Maritime Administration, the cost of incorporating defense features aboard newly constructed merchant ships has been paid by the Federal Government. Carriers may choose not to include Navy-approved defense features if their installation would lessen productivity of their ships or otherwise limit their profit-making capability.

Partially as the result of real-life relationships *which the Declaration of Policy could not* reshape, there have been countless calls and recommendations to almost every administration to establish a coherent, integrated maritime policy. The policy would deal with the inherent conflict requiring a merchant marine to sustain itself by making a profit in a highly competitive world trade arena, and also expecting it to provide ships and crews for direct military support in an emergency situation.

The transfer of the Maritime Administration from the Department of Commerce to the Department of Transportation was made for a number of reasons, among them to assure that ocean transportation policies were part of an overall transportation policy rather than an exception to them.

There have been, as noted, many attempts to promote maritime growth and stability by enactment of legislation. The followup Merchant Marine Act of 1928 offered several incentives for construction of U.S. flag ships. Forty-two U.S. flag ships were built between 1928 and 1936.

The Intercoastal Shipping Act of 1933 required that rate and fare schedules be filed by common carriers—an attempt to put a damper on fierce competition then undermining the well-being of the industry.

Another protective measure was passed in March 1934. Public Resolution 17 mandated that certain agricultural products, as well as other products in the export trade, must be carried in U.S. flag ships unless the Maritime Administration certified that suitable ships were not available to fulfill shipping requirements.

All of these legislative actions were merely preludes to what became the bedrock of later maritime legislation, the Merchant Marine Act of 1936. It initiated the direct subsidy programs previously mentioned, the Construction Differential Subsidy (CDS) and Operating Differential Subsidy (ODS)—payments to carriers by the Maritime Administration. Direct subsidies have been a fact of maritime life ever since. The 1936 Act also:

1. Reaffirmed U.S. policy of supporting a merchant marine capable of carrying the nation's domestic commerce and a substantial portion of its international waterborne commerce, and capable of serving as a naval and military auxiliary in time of war or national emergency.
2. Established a five-member Federal Maritime Commission.
3. Established a Maritime Administration in the Department of Commerce to be headed by the Assistant Secretary of Commerce for Maritime Affairs.

4. Required that the Department of Commerce provide training for mariners at the Merchant Marine Academy at Kings Point, N.Y., and aboard Government-owned or -subsidized ships.

5. Established minimum manning and wage scales and set work standards for merchant seamen.

6. Guaranteed financing of new ship construction.

7. Provided war risk insurance for private carriers.

8. Provided for Navy review of plans for new ships and submission of recommendations for inclusion of national defense features.

9. Initiated a program to build 50 ships a year for a period of 10 years following passage of the Act.

The 1936 Act established a comprehensive maritime program that affected all elements of seapower with the exception of the Navy. It included measures to assure that a shipyard based for emergency expansion of sealift capability was maintained and that training was provided both prospective and already employed mariners. It sought to put the U.S. merchant marine on a firm competitive footing with merchant fleets of other nations.

Over the years, however, the differences between costs of building and operating a U.S. flag ship and one built and operated by foreign nations where labor costs are significantly lower have substantially narrowed. The major difference is more a result of declining U.S. productivity. Foreign shipyards, many rebuilt following World War II, are generally more productive than U.S. yards. In addition, as maritime unions have sought to protect the jobs of their members, overall labor costs aboard U.S. flag ships have not been competitive because of higher manning standards and overall personnel costs.

Jet aircraft, labor costs, and other factors have adversely affected passenger ships on the world's seas. Except for short hauls or in areas where there is no air service, only cruise ships are specifically operated to carry passengers.

Since World War II, there have been major changes in international transportation. Both Third World and Communist Bloc nations have strengthened their maritime muscle—while that of the United States has weakened. The decline of the U.S. merchant marine has been to a great extent a result of increased competition in international trade. The Soviet Union has made great strides and has penetrated new markets. Third World nations have developed their own merchant fleets, and carry much of their own trade.

Passage of the 1936 Act was a big step forward in meeting the challenges that stemmed from United States entry into that war in December 1941. As noted previously, nearly 5,300 merchant ships were constructed by the United States during World War II, but many of them were launched too late to be of any value. After the war it became necessary once more to dispose of a large U.S. inventory of merchant ships.

RECENT MARITIME LEGISLATION

The Merchant Ship Sales Act of 1946 authorized the sale of surplus ships not only to U.S. citizens but also to wartime Allies of the United States. More important, as history later proved, were provisions of the Act that established a National Defense Reserve Fleet under control of the Maritime Administration.

The purpose of the NDRF was to maintain ships that could support the military services in an emergency. The soundness of the legislation was proved during the United Nations conflict in Korea and United States involvement in Southeast Asia. During the war in Southeast Asia, for example, more than 170 ships were withdrawn and operated by private carriers under Military Sealift Command control. More than 600 had been activated to support United Nations operations in Korea.

In the early 80s, only about 130 of the World War II holdovers still in the NDRF are considered to have potential military value. As a result, a program was initiated by the Navy and the Maritime Administration to maintain a group of NDRF ships in a 10-day readiness state. They include the more modern ships that the Maritime Administration has received as trade-ins on new construction. This element of the NDRF is known as the Ready Reserve Force (RRF) in military language, and as the Ready Reserve Fleet (RRF) at the Maritime Administration. Composition of the RRF is covered in another chapter.

Major amendments were made to the 1936 Act by passage of the Merchant Marine Act of 1970. Basically, the 1970 Act was intended to stimulate continued growth of the merchant marine. It established a goal of constructing 300 new ships between the 1971 and 1980 fiscal years. Its intent was to increase the share of the nation's foreign trade carried by U.S. flag ships from 4.8 percent to 14 or 17 percent.

The Act also provided for the creation of efficient shipbuilding and adequate repair facilities manned by skilled workers to provide a strong mobilization base. The Act directed reduction of construction differential subsidies from 55 percent of total cost to 35 percent by fiscal year 1977. Other important provisions included extension of tax deferment privileges to unsubsidized operators and payment of operating subsidies to bulk operators, including those operating foreign-registered ships. Then, as now, most bulk cargo including highly critical strategic minerals required to manufacture war materials, moved to and from the United States in foreign flag ships.

While it would be improper to assess effectiveness of the 1970 Act solely in terms of the ships it caused to be built, it is nevertheless fact that very few ships were built as a result of that legislation. Many ships built since 1970 would have been constructed without provisions of the 1970 Act. However, it did update legislation that had not been significantly amended since passage of the 1936 Act. Perhaps more important is the realization that a new approach is needed.

In 1980, a concerted effort was made by the House Committee on the Merchant Marine to pass legislation (figure 5-2) for a coherent, integrated, single maritime policy for the United States that focused on national objectives. The so-called Omnibus Bill that was introduced into the House sought maritime legislation in a single

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Figure 5-2.—A congressional committee hearing on merchant marine legislation.

package. Similar efforts were made in the Senate. That both failed was the result of the pressures of a Presidential election year, changes in leadership in both the House and Senate, resistance within and outside the industry, and the magnitude of the effort involved. It proved to be impossible, at least in the eyes of many observers, to draft as far-reaching and comprehensive a bill as was needed. The diversity of interests that were affected made it impossible to attract broad support for passage of such legislation.

GOVERNMENTAL SUPPORT OF THE MARITIME INDUSTRY

It became more obvious, however, by the end of the 1970s that attention must be given the merchant marine if it is to serve as a naval auxiliary in an emergency. Congressional recognition that strategic mobility of the Armed Forces depends on the ability of sealift to provide logistical support was evidenced by the appropriation of funds for development of a Near Term Pre-Positioned Force which, in 1980, was stationed in the Indian Ocean. Ships in that small force carry equipment and supplies to support 15,000 U.S. Marine Corps troops plus several Air Force wings. Troop units to be deployed in an emergency are part of the Rapid Deployment Force.

Congress appropriated money to fund the purchase of eight SL-7 container ships that a private carrier had replaced with ships that could be operated more economically. (See figure 4-15.) The SL-7s can sustain speeds of 30+ knots. Six of the eight have already been purchased and are to be reconfigured and anchored at strategic ports in the United States. Manned by small crews, they can be put into full operation within a few days to support military operations. No plans exist to operate the ships for peacetime movement of military cargo. The two remaining SL-7s are expected to be procured by the Navy, as are other specialized carriers already in the U.S. flag merchant fleet inventory. Modifications to be made on such ships will strengthen their capability to support deployed troops. The primary purpose of this modification is to make the ships self-sustaining.

Over the years, a number of laws or agreements have been enacted which are intended to make certain that the military services do not operate cargo ships in peacetime that compete with privately owned carriers. Aware of industry fears, the Department of Defense traditionally has followed policies based on its recognition that development and maintenance of a merchant marine capable of augmenting military sealift in an emergency requires military reliance on private industry in peacetime as well as in an emergency.

While Military Sealift Command has a sizable controlled fleet when compared to an individual carrier, all but a few of the dry cargo ships in that fleet are chartered from private industry. Government-owned ships carry only a small percentage of military cargo each year with the bulk of dry cargo (96 percent) moving on privately owned and operated carriers. MSC also has a small number of tankers. Most of those are operated by civilian contractors for the command. Privately owned tankers deliver 87 percent of the petroleum products consumed by the military services in peacetime. Nearly half of the ships in the MSC Controlled Fleet—such as fleet support ships which include oilers, stores ships, ammunition ships and oceangoing tugs—are of the types not available in the merchant marines. Also included in this group are scientific support ships involved in hydrographic and oceanographic research missions or special projects like space flight explorations, support of missile test centers, or in testing and calibration of Navy submarine electronic systems.

The 1904 Cargo Preference Act: The Act provides that only U.S. flag shipping will be used for the transportation of supplies and equipment for the military service. Both Government and privately owned ships qualify under the provisions of this Act. Cargo can be carried on MSC nucleus fleet ships, chartered ships, or commercial carriers (if U.S. flag) to satisfy the provisions of this Act. The Act also required that freight charges by U.S. flag carriers cannot be execessive or otherwise unreasonable. If such is the case, or if no U.S. flag ships are available, MSC can use foreign flag ships to satisfy military requirements.

The latter provisions have been reinforced by an opinion rendered by the Attorney General who pointed out that the preference granted by the 1904 Act is a privilege to be claimed by the carriers, and that its provisions would be inoperative if not claimed by the carriers. In the Curran v. Lairr case (420F.2d 122) (D.C. Cir. 1969), the court held that the Act is subject to an implied exception that foreign ships may be used when U.S. flag ships are not available, and that this implied exception does not require a finding by the President that that is the situation. The court also ruled that ships subject to requisition could not be considered to be available merely because they could be requisitioned, and that Government use of foreign flag ships rather than activating ships from the NDRF is not subject to judicial review. The net result of these rulings is that Department of Defense, primarily through Military Sealift Command, has a responsibility to assure that no privately owned U.S. flag ships are available at fair and reasonable rates before resorting to use of foreign flag ships. Carriers, on the other hand, must voluntarily make their ships available to qualify for carriage of military cargo.

The 1936 Cargo Preference Act as amended in 1954, the so-called 50-50 Law: The Act provides that at least 50 percent of cargo generated by the Government of the United States must be transported in privately owned U.S. flag commercial vessels to the extent that such vessels are available. Cargo covered by this Act includes materials, equipment, or supplies procured by or contracted for by the Government for sale or transfer to foreign governments, or items bought in the United States with funds loaned or otherwise made available to foreign governments. In short, the Act covers almost all Government-generated cargo. The 50 percent minimum is computed separately for dry, bulk, and tanker cargo. Vessels built outside the United States or rebuilt and documented outside the United States after September 1961 cannot be considered as U.S. flag vessels for the purposes of this Act until they have been documented under U.S. law for a period of 3 years.

With regard to the 50-50 Law, the Comptroller General has ruled that military cargo must be sent to ports served by U.S. flag ships. It may not be sent to ports served only by foreign flag ships as an excuse to use such shipping. The Comptroller General also has held that a U.S. container ship system using foreign flag feeder ships in conjunction with U.S. flag container ships does not meet the requirements of the 1904 Act. As a result of that decision, the Secretary of Defense has established priorities for the use of common carrier transportation. In the order of precedence, the priorities are:

1. The use of U.S. flag container ship through service.
2. The use of U.S. flag breakbulk ships.
3. The use of U.S. flag container ships with foreign flag feeders.
4. The use of foreign flag shipping services.

The Comptroller General has held that the 1904 Act does not apply to contracts for ocean tows which MSC often enters into to fulfill military needs.

Thus, MSC may solicit both U.S. and foreign flag tugs to move ships, barges, and other craft for movements between foreign ports or between a U.S. port and a foreign port. However, MSC must procure U.S. flag service when it uses tug and barge systems for the transport of military cargo.

An Act passed in 1936 (46 USC 1241(s)) concerning Government employees and their effects: This Act requires that any employee of the United States on official business overseas shall travel and transport his or her personal effects on ships registered under the laws of the United States when such ships are available.

The Wilson-Weeks Agreement: The Agreement was signed in October 1954 by then-Secretary of Defense Charles Wilson and then-Secretary of Commerce Sinclair Weeks. It has neither been amended nor updated since that time, although some of its provisions obviously are outdated. The Agreement recognizes traditional fears of the industry and establishes guidelines for the size of the MSC nucleus fleet. In addition, the Agreement establishes priorities for use of sealift assets in the peacetime lift of military cargo worldwide. In the order of precedence, services or assets to be used by MSC include:

1. The MSC Controlled Fleet.
2. Maximum use of berth-line or scheduled commercial service.
3. Charter of privately owned ships.

MILITARY SEALIFT COMMAND

WILSON - WEEKS AGREEMENT

PURPOSE:

- **TO OVERCOME INDUSTRY FEARS OF GOVERNMENT COMPETITION**

FEATURES:

- **RECOGNIZES NEED FOR CONTROLLED FLEET**
- **ESTABLISHES PRIORITIES FOR ACQUISITION OF ASSETS & SERVICES**

—NUCLEUS FLEET

—SCHEDULED LINES SERVICE

—CHARTERED VESSELS

—GENERAL AGENCY AGREEMENT SHIPS

—FOREIGN FLAG

Figure 5-3.—Wilson-Weeks Agreement.

4. Ships from the Ready Reserve Force and/or other NDRF ships.
5. Foreign flag service or the charter of foreign flag ships.

At the time the Wilson-Weeks Agreement (figure 5-3) was entered into, commercial carriers operated primarily breakbulk-type ships and were fearful of the Government operation of ships in direct competition with industry. With the advent of intermodalism, only a few breakbulk ships are operated by industry and fewer still are available to MSC for charter and operation. At the same time, MSC has no great need for the charter and operation of container ships which are less than ideal for contingency support. Neither is there a commercial market for the charter of such ships. Thus, the importance of the Wilson-Weeks Agreement as a means of allaying industry fears of competition and as a method of restraining MSC operations has drastically diminished in the nearly three decades since it was signed.

In reality, the Agreement poses no real limitations on the command since Defense Department policy has been to rely on commercial shipping in peacetime, a recognition of the fact that doing so is necessary to maintenance of a merchant marine capable of providing support of the military services in an emergency. There also is some doubt as to the legality of the Wilson-Weeks Agreement since its provisions are not fully consistent with general procurement acts which require that shipping be obtained at the lowest possible cost. Conceivably, some feel, the Agreement could limit use of RRF-NDRF resources in an emergency. Thus, while the impact of the Wilson-Weeks Agreement on MSC operation is minimal, it may well have become outdated, particularly so with regard to those sections that apply to the sizing or the MSC nucleus fleet. That fleet no longer contains troopships, aircraft mini-carriers, refrigerator ships, and small craft listed in the Agreement.

Overall, MSC has had no problem in complying with the provisions of varied cargo preference legislation. In recent years, more than 96 percent of all dry cargo and 87 percent of petroleum product volume have moved in privately owned ships. The nucleus fleet moves only about 3 percent of military cargo, and dry cargo moving on common carriers is from 65 to 70 percent of the total MSC carriage. The breakdown of cargo moving by common carrier indicates that up to 20 percent moves under public rates and 80 percent under MSC negotiated rates published in its container and shipping agreements.

MSC has recommended legislation that would allow the command to secure additional ships in the future by build-and-charter procurement. The proposed legislation has been approved by the Department of Defense and the Department of the Navy. Over the years, MSC has procured 28 ships by some form of build-and-charter procurement, some of which were the result of special legislation. However, recognizing that the command can be accused of off-budget financing of new ship construction, the suggested legislation establishes systems for congressional review and approval of any future build-and-charter procurement. Under build-and-charter, to meet command requirements, private investors agree to have a ship or ships constructed on the basis of an MSC commitment to charter the ship or ships for a specified period at mutually agreed-to charter hire rates.

To facilitate study of or research into actions by the Congress to promote the maintenance of a viable merchant marine, a complete listing of legislative acts that have a direct bearing on MSC and its operations follows the summary.

SUMMARY

As can be concluded from this chapter and the list of legislative actions, considerable emphasis has been given by the Congress to protect the U.S. merchant marine from foreign competition, to subsidize its operations in peacetime, and to provide other financial benefits. Historically, maritime legislation has recognized, at least indirectly, that the one essential to the development and maintenance of a strong merchant marine is availability of cargo. If private carriers cannot make a profit, they cannot expect to survive. Profits are generated only by the carriage of cargo.

A review of U.S. maritime legislative history suggests another point worthy of study. It concerns a long-standing national policy that the privately owned merchant marine must be able to provide emergency sealift support of the Armed Forces. An obvious question is whether the various forms of subsidy have been used to help develop emergency augmentation capability, or whether they have been used primarily to support the building and operation of ships with little or no direct value to the military services. When analyzing the effectiveness of subsidies, the questions that must be asked are: Are subsidies an effective means of maintaining a strong merchant marine? Have subsidies cost too much? Have they returned too little benefit? Is there a better way to maintain a merchant marine that would be justified if it served no other purpose than to help assure the security of the United States?

These are questions that must be asked during future consideration of all proposed maritime legislation.

STATUTES OF SPECIAL INTEREST TO MSC

1. Statutes Limiting Method of Carriage for Government Cargo

   a. Generally:

      10 USC 2631—1904 Cargo Preference Act.

      46 USC 124(b) (1)—50/50 Cargo Preference Act.

   b. Specific Transportation:

      46 USC 1241(a)—Government Employees and Their Effects.

      10 USC 2634(a)—Privately Owned Vehicles (POVs).

      46 USC 1241(c)—POVs on Commercial Ships.

      10 USC 4745—Civilian Passengers and Commercial Cargoes on DOD Trans-Atlantic Service.

2. Statutes Affecting Operation of MSC Ships

46 USC 362(a)—Public Vessels Exempted from Navigation and Inspection Laws.

P.L. 891, 64 Stat. 1128—Waiver of Navigation Laws.

33 USC, 1221-1232, Title 46 USC 214-3902—Port and Tanker Safety Act, 1978.

5 USC 5102(c)—Civilian Marine Personnel Exempted from Classified Civil Service Group.

5 USC 5348—Pay of Civilian Marine Personnel.

5 USC 5363—Limitation on Pay Fixed by Administrative Action.

46 USC 741—No Legal Attachment of MSC Ships.

46 USC 742—U.S. Subject to Libel in Personal and Liable as Charterer for Debts of Owner of Ship and for Charges against Government Cargo.

46 USC 781—U.S. Liability for Damage Caused by Public Vessel.

46 USC 688—Recovery for Injury to or Death of Seamen (Jones Act).

3. Statutes Relating to Availability of Government-Owned Ships (MARAD)

40 USC 483a—Inter-Agency Transfer of Ships.

46 USC 1125—Acquisition of Vessels by Secretary of Commerce.

50 USC App. 1744—National Defense Reserve Fleet under MARAD.

4. Statutes Relating to Regulation of Ocean Transportation

P.L 575, 68 Stat. 681—Long-Term Charter of Tankers.

P.L. 633, 68 Stat. 800—Authority to Acquire Six(6) RO/RO Ships.

46 USC 1242(a),(E)—Requisition/Purchase of ships by Secretary of Commerce during National Emergency.

50 USC, 1601, 1620-22, 1631, 1641, 1651—National Emergency Act, 1976.

46 USC 883—Cabotage Act (Merchant Marine Act of 1920, Jones Act).

46 USC 1300-15—Carriage of Goods by Sea Act (COGSA).

46 USC 801-48—FMC Authority, under Shipping Act 1916 and Intercoastal Shipping Act, 1933.

49 USC 901-23—ICC Regulation of Interstate Water Commerce.

49 USC 316(c)—ICC Regulation of Interstate Intermodal Commerce with Alaska and Hawaii.

46 USC 11-83k—Registry of Ships in Foreign Trade.

46 USC 251-336—Enrollment of Ships in Domestic Trade.

42 USC 1857 ETSEQ—Clean Air Act.

46 USC 170-170b—Carriage of Explosives or Dangerous Substances.

49 USC 1801-1812—Hazardous Materials Transportation Act.

19 USC 4101-1499—Administration of Customs Laws (Tariff Act of 1930).

33 USC 1251 ETSEQ—Federal Water Pollution Control Act (Clean Water Act).

5. Statutes Concerning Insurance, Liability, and Government Subsidy

46 USC 1300-15—COGSA (see text under 4 above).

46 USC 182—Fire Statute.

46 USC 183(a),(b)—Limitation of Ship Owner's Liability.

46 USC 190-192—Illegal to Avoid Certain Liabilities by Contract (Harter Act).

46 USC 1282(a)—War Risk Insurance Provided by Secretary of Commerce.

46 USC 1283—Property Covered by War Risk Insurance.

46 USC 1285—War Risk Insurance for Government Property.

46 USC 1151-61—Ship Construction Subsidy under MARAD.

46 USC 1171-83a—Ship Operating Subsidy under MARAD.

46 USC 1271-79—Ship Mortgage Insurance under MARAD.

6. Statutes Relating to Procurement

10 USC 2208—Navy Industrial Fund (NIF).

10 USC 2301-14—Armed Services Procurement Act.

50 USC 1431—Extraordinary Contracting Authority during defense emergency.

41 USC 601-613—Contract Disputes Act 1978.

41 USC 11—Limited Authority to Exceed Current Appropriation.

41 USC 321-322—Wunderlich Act: Judicial Review of Administrative Decisions.

CHAPTER 6

THE FEDERAL MARITIME COMMISSION, MARITIME ADMINISTRATION AND U.S. COAST GUARD

Three Federal agencies have particular relationships with Military Sealift Command. Those agencies have a primary responsibility for promoting the welfare of the U.S. merchant marine, for protecting the interests of sea transportation consumers, and for assuring the safe navigation of ships and the safety of passengers or cargo that the ships deliver.

Throughout U.S. history, there have been divisions of responsibilities and authority among Federal agencies responsible for maritime matters. For example, the Federal Maritime Board had the conflicting responsibilities of promoting the wellbeing of the maritime industry while simultaneously being charged with regulating it. In 1961, Congress passed a reorganization plan which established an independent Federal Maritime Commission (FMC) (figure 6-1) and made it responsible for regulation of the maritime industry. Congress also abolished the Federal Maritime Board and transferred its promotional responsibilities to the Maritime Administration, then an element of the Department of Commerce. Now it is part of the Department of Transportation.

The history of the U.S. Coast Guard dates back to 1790 when Secretary of the Treasury Alexander Hamilton formed the Revenue Marine to enforce U.S. law in coastal waters. The agency remained under the control of the Department of Treasury until 1966, when it was transferred to the Department of Transportation. In wartime, however, the Coast Guard becomes part of the Navy as it did during both World Wars I and II.

A review of each of these agencies and their relationships with the Military Sealift Command and the maritime industry can help provide a better perception of the broad subject of ocean transportation and MSC's role as the Defense Department sealift operating agency.

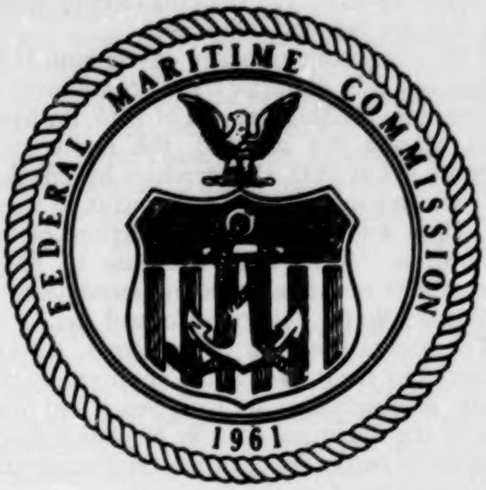

Figure 6-1.—The Federal Maritime Commission logo, 1961, (Chart Logo).

FEDERAL MARITIME COMMISSION

The primary mission of the Federal Maritime Commission is to represent the consumers and to protect the interests of the businesses, individuals, and the military services who rely on American-flag shipping in one manner or another. FMC is a regulatory agency with the power to make certain that ocean shipping rates are equitable and to assure that consumers pay no more than is required. At the same time, FMC ensures that the shipping companies do not discriminate against some ports or shippers, do not give privileges to preferred shippers, or engage in practices such as rebating or offering special discounts that favor one class of customer at the expense of another. FMC also adjusts ocean shipping rates to assure that they are just and reasonable.

FMC regulatory authority covers both U.S. foreign and U.S. domestic trade. Its authority is derived from the Shipping Act of 1916, the Merchant Marine Act of 1920, the Intercoastal Shipping Act of 1933, the Merchant Marine Act of 1936, and subsequent amendments to these acts. These acts also detail the functions of the commission. More recent additions to FMC responsibility were established by amendments to the Federal Water Pollution Control Act.

The commission has five members. All are appointed by the President and approved by the Senate. Appointments are for 5 years, but only three of the five members may be chosen from one political party. The chairman on the commission is designated by the President.

While the commission is a regulatory agency, it does not have the authority of some agencies; for example, the Interstate Commerce Commission or the Civil Aeronautics Board. The commission can disapprove rates for carriage of foreign commerce but cannot establish what it considers to be fair and reasonable rates. In the domestic trade, however, the commission can establish rates. Another limitation is FMC's inability to limit the entry of carriers into U.S. commerce; i.e., the carriage of U.S. foreign trade.

Perhaps the two most important functions of the FMC are its review of rates filed by ocean carriers to ensure they are fair and reasonable and evaluation of agreements involving carriers subject to Section 15 of the Shipping Act of 1916. The act authorizes the commission to approve noncompetitive agreements by carriers. Actions under such FMC-approved agreements are thus exempt from the Sherman and Clayton antitrust laws. FMC reviews such carrier agreements to ensure that the parties concerned do not exploit resulting immunity from antitrust prosecution. A second reason is to see that competition has not been limited or eliminated by carrier actions that adversely impact on the consumer.

Other key FMC functions include the review of shipping agreements by carriers and the tariffs filed by domestic offshore and common carriers engaged in foreign commerce; the setting or suspension of rates for domestic offshore carriers, issuance of certificates of financial responsibility to the carriers, and issuance of licenses to freight forwarders who participate in U.S. foreign trade.

FMC functions also include investigation of complaints concerning reasonableness of shipping rates, development and promulgation of rules and regulations to assure conformity with U.S. statutes, and cooperation with Department of State to discourage discriminatory practices against U.S. shippers or shipping by foreign interests or governments. FMC can grant reparations such as return of payments, or assess civil penalties for violations of regulations by shipowners or operators. FMC certifies the financial responsibilities of carriers to meet costs of cleaning up oil spills or other hazards they may create.

Most MSC relationships with FMC involve procurement and legal matters. For example, all of the shipping and container agreement rates MSC negotiates with industry are filed with FMC. In the past, particularly in the 1960s and early 1970s when segments of industry sought to substitute some form of cargo allocation for MSC competitive procurement, FMC decided to review MSC rates that were submitted in compliance with FMC regulations. The primary problem encountered stemmed from the fact that the rates, which were for 6-month periods, were usually replaced by new rates before FMC could collect necessary data and make a valid judgment. In recent years, primarily because of cooperation between FMC and MSC and between MSC and industry, and because of higher rates partially caused by lowered competition, there has been little or no pressure for FMC review of the carriers' military rates. Data gathered in past years has been extremely useful in arriving at rates that satisfied all parties to the shipping and container agreements, as well as FMC, whose primary concern has been whether or not rates offered to the military services covered fully distributed costs of the carriers.

However, past FMC reviews of rates offered to MSC by the carriers in response to annual command requests for proposals previously required by FMC's General Order 29 were suspended for FY 1982. A review of foreign trade rates offered to MSC by the carriers is not likely to be reinstated unless a serious problem is identified by either MSC or the industry.

As a customer of the ocean carriers, MSC appeals to FMC to determine the reasonableness of domestic trade rates and to rule out rates considered to be too high. FMC determinations are based on public hearings during which the office of the MSC counsel represents both the command and the shipper service it supports. MSC participates in all hearings concerning public rates since military cargo moves under such rates, as well as rates contained in command shipping and container agreements.

MARITIME ADMINISTRATION

MSC has a closer relationship with the Maritime Administration than with any other non-Defense Department agency. The roots of that relationship are in the maritime industry. The Maritime Administration's primary mission is to promote the well-being of the American merchant marine. MSC has a direct stake in the maintenance of a strong maritime industry since it is the source of the services MSC needs to meet its peacetime missions, as well as the source of augmentation needed for emergency expansion of Department of Defense sealift capability.

Since it was established in May 1960 as the successor to the Maritime Commission and the Federal Maritime Board, the Maritime Administration has been responsible for administering a number of Federal programs and statutes, the principal one of which is the Merchant Marine Act of 1936.

The Maritime Administration's ultimate objective is to help develop and maintain a merchant marine capable of carrying the nation's domestic waterborne commerce and a substantial portion of its foreign trade, and a merchant marine capable of serving as a military auxiliary in an emergency. The intent of the programs the agency administers is to assure that facilities and ships that make up the merchant marine are owned by American citizens and registered and operating under the U.S. flag. It also seeks to assure that U.S. ships are the best equipped and safest possible—and manned by U.S. citizens.

The head of the agency is the Maritime Administrator. The position was downgraded from the Assistant Secretary level when MARAD was shifted from the Department of Commerce to the Department of Transportation. Based in Washington, D.C., the Maritime Administration has four regional subelements—the Eastern Region, Great Lakes Region, Central Region, and Western Region. It also is responsible for funding and operating the U.S. Merchant Marine Academy at Kings Point, N.Y. (See figure 6-2.)

Overseas, the agency is represented by foreign maritime representatives who provide marketing support for U.S. carriers in their overseas operations and help mediate problems which may arise between U.S carriers and foreign importers or exporters. Another important function of overseas representatives is to collect data needed to determine the extent of operating and construction differential subsidies paid to U.S. ship operators.

The Maritime Subsidy Board, headed by the Maritime Administration administrator, uses data gathered from a variety of sources to determine the cost of constructing and operating foreign flag ships. Armed with that data and the results of hearings it conducts, the board makes and amends or terminates contracts with U.S. flag carriers to pay subsidies intended to offset the difference between construction and operating costs of U.S. and foreign flag ships. Payment of operating differential and construction differential subsidies over the years has had the purpose of making U.S. flag ships more competitive with those operated under foreign flags.

The Maritime Administration makes a considerable investment in research and development to assure that water transportation technology keeps pace with advances in other fields of transportation. Most of the investment is made in the form of awards to private industry for

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Figure 6-2.—An aerial view of the U.S. Merchant Marine Academy, Kings Point, N.Y.

studies, research, and analyses (figure 6-3). State-run maritime academies receive grants from the Maritime Administration, and students attending those schools can receive tuition assistance. The agency also is actively involved in marketing efforts to increase merchant marine participation in both domestic and foreign trade. Other Maritime Administration programs promote the development of U.S. ports and ship support facilities.

State maritime academies, aided by the Maritime Administration, are operated in New York, Maine, Massachusetts, California, Texas, and Michigan. Like the Kings Point school administered by the Maritime Administration, the academies offer 4-year programs leading to a BS degree, a third mate's or third engineer's license, and a commission in the Naval Reserve. Michigan also offers and associate degree at its Great Lakes Maritime Academy.

The Maritime Administration administers a number of programs that have dual significance; that is, they help promote merchant marine competitiveness and thus, provide emergency augmentation capability.

Payment of Federal construction and operating differential subsidies has an impact on merchant marine augmentation capability since subsidies stimulate investment of private capital for new ship construction. In any future contingency when it is likely that there will not be time to launch a merchant shipbuilding program, and when the military services will need to rely on existing capability, a strong and viable merchant marine is of critical importance to national security.

Also, stimulating ship construction is the Title XI guarantee of privately held ship construction and mortgage loans that the Maritime Administration provides. Title XI guarantees assure lenders that loans they make will be repaid. Such

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Figure 6-3.—A product of studies funded by the Maritime Administration is this model of a 170,000 deadweight ton nuclear-powered 900-foot submarine as a means of moving oil from the Arctic to ice-free North Atlantic ports.

guarantees are authorized by the Federal Shipping Financing Program. At the beginning of the 1980 fiscal year, more than 2,500 ships had been covered by Title XI contracts whose cumulative dollar value totaled more than $6.4 billion.

Maritime Administration also administers a Capital Construction Fund program. It allows shipowners in foreign, Great Lakes, and noncontiguous domestic trades to defer Federal taxes on vessel and investment earnings by setting aside money to be used for future ship construction. Since the program began, shipowners have put more than $1.7 billion into a Capital Construction Fund and more than $1.3 billion has been used to finance carrier expansion or ship replacement efforts.

The maritime industry promotional agency plays an even more direct role in shipbuilding through its office of ship construction. Staff members develop prototype designs for merchant ships, advise subsidized operators concerning designs they develop on their own, take part in sea trials of newly constructed ships, and conduct an active value engineering program designed to lower ship costs while improving ship effectiveness.

Because of MSC reliance on the merchant marine for peacetime shipping services and as a source of chartered ships, and because of command reliance on the industry for assets and systems needed to meet its own mission of developing an expansion capability to meet emergency military sealift needs, MSC and Maritime Administration interests tend to overlap in many areas. MSC engineering, contracting, supply, and operations personnel all have working relationships with their agency counterparts.

For example, when the Maritime Administration reviews new merchant ship designs, it asks that MSC review the same designs to determine what national defense features might be included in the ships to be built. The agency also arranges for Federal financing of defense features that can be included without adversely impacting on ship productivity, and thus on their profit-making potential.

MSC supply personnel maintain continuing contact with Maritime Administration officials to assure that parts and other standard items needed for repair of its own merchant-type ships are available. Since MSC Nucleus Fleet ships are maintained in commercial yards—which Maritime Administration promotes as part of its overall support of the maritime industry—there is frequent interagency coordination with regard to services available, supplies or equipment required, or current technological developments that can be taken advantage of by MSC.

An example is the development of relatively new systems for handling shipboard sewage. Equipment for the quick cleanup of oil spills or systems for the conservation of fuel are additional examples (figure 6-4). Both MSC supply and MSC engineering are routinely involved with the Maritime Administration in these areas.

MSC personnel work with the Maritime Administration in establishing and operating firefighting schools on both the East and West Coasts of the United States. Command personnel officials also are interested in other training provided by the Maritime Administration since

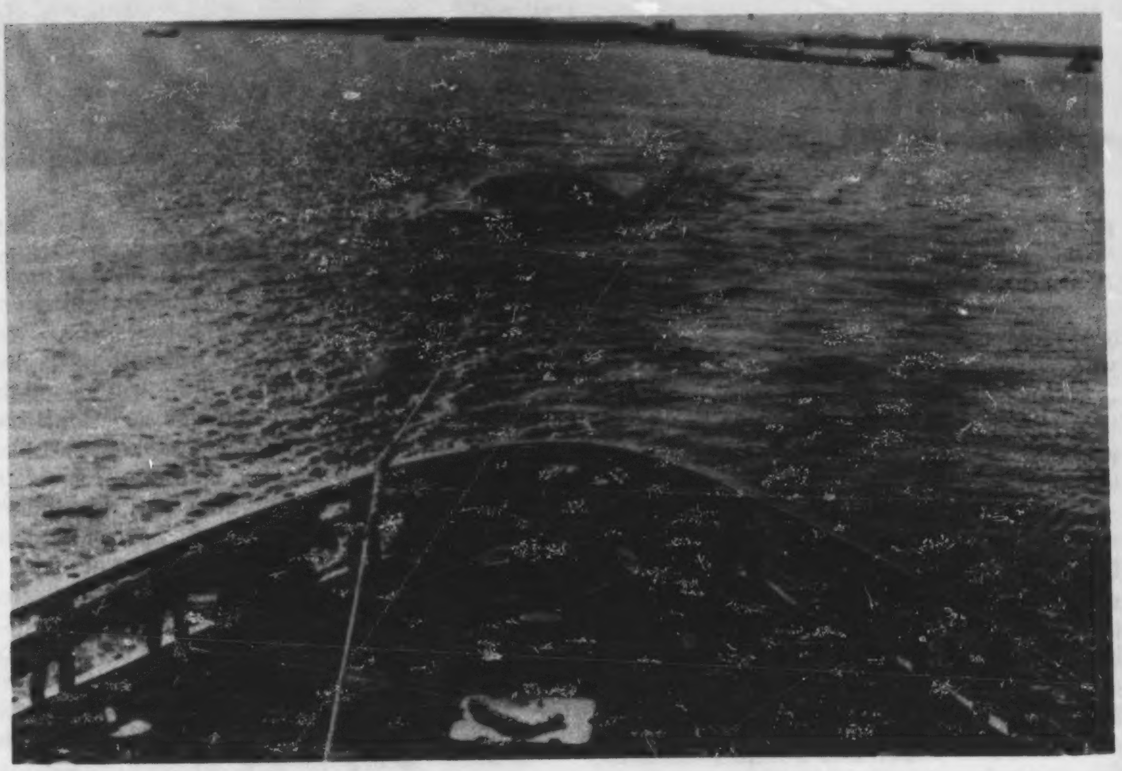

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Figure 6-4.—A 140-foot collapsible rubber bladder capable of holding 140,000 gallon of oil.

many of the mariners it recruits are graduates of Federal or state maritime academies. Ship manning scales established by the Maritime Administration often are a focal point for face-to-face contacts between members of the two agencies. Manning scales obviously influence MSC-union relationships.

Similar coordination takes place between MSC procurement or contracting officials and the Maritime Administration agency. On occasions, MSC may need the services of a subsidized ship and may demand that the owners get a waiver from the Maritime Administration. Normally, subsidies cannot be paid for ships carrying Government cargo. MSC must validate the military necessity of whatever actions may be required or provide the Maritime Administration with additional information to assure that carriers do not simultaneously benefit from subsidy and laws assuring industry carriage of Government cargo.

A broad area of cooperation and coordination between MSC and the Maritime Administration results from a working, but unwritten, reciprocal agreement between the two agencies. This agreement is for the exchange of data, other types of information, or just plain "know how." Since the Maritime Administration is involved in research and development (R&D) efforts, in continuing analyses of the maritime labor pools, in training efforts ranging from college level to on-the-job instruction, and in providing financial, operational or business advice to U.S. flag carriers, it obviously has a veritable treasure of data that MSC can and does use in its own relationships with industry.

MSC contracting, for example, may need information about manning scales or characteristics of a specific ship, port conditions in a foreign country, or availability of technological expertise. The answers are frequently found at the Maritime Administration. Conversely, since MSC operates worldwide and is unique in that it has ships not normally found in industry, MSC is in a position to provide its sealift expertise to the Maritime Administration planners.

It is this swap of ideas, the exchange of expertise, and the flow of data from agency to agency that has forged the ties that exist between the two agencies. On occasions, requests are more formal, with MSC paying the Maritime Administration for data or research assistance it needs. Another avenue for informational exchange is provided by established policy and working groups, each with Navy and Maritime Administration representatives. They meet regularly to discuss military sealift needs and maritime industry support of those requirements. On the Navy side, a key role is played by the Deputy Chief of Naval Operations for Logistics with the MSC Commander and staff. The Maritime Administrator is the key representative for his or her own agency and for the maritime industry.

The dominant and mutual concern is national security. National security is the driving force behind the close interface between Navy, MSC, and the Maritime Administration. A number of on-the-book statutes have established and confirmed the long-term national policy that the merchant marine be capable of serving as a national auxiliary in time of emergency or war. Thus, while MARAD's immediate concern is the economic well-being of the maritime industry, the ultimate test is the capability of that industry to fulfill military requirements in any emergency.

That responsibility demands that the Maritime Administration be aware of what military sealift requirements may be. Navy and MARAD cooperate in developing plans for emergency sealift augmentation, in encouraging the development of merchant ships with high potential for military support, and in establishing policies, programs, and procedures to promote sealift readiness of the merchant marine.

Emphasis is placed on improving communications with ships, including development of a maritime satellite communications system. A computer-based Maritime Administration program, the U.S. Merchant Ship Locator Filing System (USMER), can provide up-to-date locations of all merchant ships granted binders under the agency's war risk insurance program. Under that program, the Maritime Administration agrees in peacetime to provide war risk insurance for specific ships that may be exposed to loss or damage in an emergency. The guarantee helps assure the availability of ships since already high war risk premiums would be even higher if the threat of an imminent shooting war existed.

Despite the obvious need for cooperation between the military services and the Maritime Administration, there have been conflicts in the past and no doubt will be in the future. For example, MARAD officials have attempted to influence the Navy to man ships with civilian, non-civil service crews in return for approving the transfer of a ship from reserve to active status. War risk insurance is limited to ships involved in U.S. trade rather than only those useful in meeting military requirements. This makes war risk insurance more of a promotional program rather than one designed solely to increase military capability of the merchant marine. There is an inherent conflict in the missions of MARAD and the Navy—promoting the civilian maritime industry and assuring strategic mobility of the military services. While that conflict must be recognized and accommodated, it ultimately must be subordinated to national security needs if readiness is to be assured.

A primary readiness program of the Maritime Administration, where cooperation has been growing in recent years, is agency maintenance of the National Defense Reserve Fleet. NRDF ships anchored on the U.S. East and West Coasts are a mix of World War II-type merchant ships and more modern vessels that have been added as their owners turned them in for credit toward construction of newer vessels. Estimates are that it would take about 60 days to activate most of the ships in the NDRF, the so-called mothballed fleet. In all probability, however, it would take considerably longer because of limited shipyard capability to handle a surge of repair and overhaul work.

However, an element of the NDRF known as the Ready Reserve Force (RRF) consists of merchant ships that can be put into operation in 5 to 10 days. Maritime Administration is responsible for maintaining the material condition of the merchant ships. Cost of maintaining the RRF is borne by the Navy, which designates the types of ships needed. Occasionally, ships are activated from the RRF—often without notice—to take part in exercises to test the effectiveness of this readiness program.

In recent years, the Maritime Administration has had a larger role in joint strategic mobility exercises with the military services. The scope of such exercises also has been broadened to include both airlift and sealift resources—the military and private industry. More emphasis has been placed on reality—on the type of situation most likely to prevail if a need to support U.S. foreign policy and national security by deployment of military forces existed.

MSC and the Maritime Administration are closely involved in a wide range of sealift readiness programs, all of which are discussed in detail in the final chapter of this text. In an emergency, MSC, as the Navy's sealift operating agency, first would attempt to broaden its capability by the charter of ships from industry and by expanding its reliance on shipping services provided by common carriers.

If additional capabilities were needed, MSC could recommend implementation of the Sealift Readiness Program (SRP) MSC manages for the Department of Defense. Under this program, carriers who participate in the carriage of military cargo, and those who receive operating or construction differential subsidies have committed ships for callup in a nonmobilization situation. Callup of such ships requires direct coordination between the Maritime Administration and MSC.

The Navy and the Maritime Administration have participated in another program to provide additional tanker services in an emergency. The Voluntary Tanker Agreement encourages participation of all tanker operators. They would meet in an emergency at the call by the Maritime Administration. After having been advised of military requirements for emergency support, the operators could allocate tankers from their own resources to meet those requirements. In this program, as in the SRP, ships are chartered by MSC at rates previously agreed to or arrived at by negotiation.

In a national emergency or in one in which the President has declared that national security is threatened to the extent that mobilization of shipping is required, merchant ships can be requisitioned by the Federal Government. In such an emergency, the Maritime Administration also can activate the National Shipping Authority (NSA). Chaired by the Maritime Administrator or a Department of Transportation-designated representative, the NSA uses Maritime Administration facilities and personnel.

The NSA could operate requisitioned ships through contracts with private carriers. It also could assign ships to Military Sealift Command for military support purposes. The National Shipping Authority also serves as the link between the United States and NATO or other collective security organizations. NSA could recommend that NATO ships already designated for support of a NATO contingency be made available to the United States in such an emergency. That recommendation would be made to the NATO Defense Shipping Authority and ultimately to the Defense Shipping Council. The council would decide if ships should be provided and make allocations as deemed necessary. NSA represents the United States on the Defense Shipping Authority.

Thus, Maritime Administration plays a strong supporting role in assuring the Military Establishment's capability to deploy and support troops. Industry ships can be made available as can industry services. Ships can be activated from the RRF or NDRF, or can be called up under the provisions of the Sealift Readiness Program. Ships can also be made available under the Voluntary Tanker Agreement. In an emergency or war, the Maritime Administration would be the focal point for the requisitioning of merchant ships and/or the allocation and use of ships provided by NATO countries.

In peacetime, just as the Maritime Administration coordinates with MSC and the Navy, it represents the United States in developing NATO relationships through the Planning Board for Ocean shipping. Since MSC mobility planners are responsible for development of the sealift support of military, emergency, contingency, and general war plans, there is an obvious long-range planning tie between MSC and the Maritime Administration. In fact, almost all missions or functions that MSC is assigned require, in some manner, a close working relationship with the Maritime Administration; for example, sealift readiness, a subject that is covered in chapter 12.

U.S. COAST GUARD

Since its establishment in 1790 as the Revenue Cutter Service, the organization now known as the U.S. Coast Guard gained a number of additional responsibilities. Between 1790 and 1915, when the present Coast Guard came into being, the Steamboat Inspection Service, Lifesaving Service, Bureau of Navigation, Lighthouse Service, and Bureau of Marine Inspection and Navigation were added to the Revenue Marine. The Coast Guard was transferred from the Department of Treasury to the Department of Transportation in 1966.

The initial mission of the Revenue Cutter Service was to halt smuggling operations—still a challenging responsibility. But Coast Guard missions have continued to expand and have become more complex.

A separate branch of the Department of Transportation in peacetime, the Coast Guard operates as part of the Department of Navy in wartime, or on other occasions when the President may direct such action. Its responsibilities and missions in such an emergency would remain unchanged. They include port safety and security, commercial vessel safety, search and rescue, enforcement of U.S. laws and treaties, promotion of recreational boating safety, the providing of aids to navigation, domestic and polar icebreaking, marine environmental protection, and bridge administration.

During the early 1980s, the Coast Guard was very active in controlling and protecting the so-called "boat people," refugees from Cuba and

Haiti (figure 6-5), who fled their countries in large numbers by boat for sanctuary in the United States. It also was active in the fight against drug smugglers and in patrolling U.S. fishing grounds. These missions continue to expand—reflecting the decisions of the world community and its impact on U.S. relations with other nations.

Each Coast Guard responsibility is based on authority contained in U.S. statutes, primarily in Titles 33 (Navigation and Navigable Waters) and 46 (Shipping) of the U.S. Code. More than 20 U.S. laws are implemented and enforced by the Coast Guard.

During World Wars I and II, the Coast Guard served as part of the Navy. Typical duties performed included convoy and escort responsibilities, aerial patrols, and service aboard Navy ships. Amphibious assault operations were an important role of the Coast Guard in World War II. The role of the Coast Guard in the United Nations war in Korea was more limited. However, in the Southeast Asia war, the Coast Guard operated coastal and river patrols, a highly dangerous operation because of the nature of that war. Coast Guardsmen also supervised the loading and unloading of ammunition ships and ships carrying other types of hazardous cargo. History indicates that missions of the Coast Guard are global in nature and have been for sometime. The title of the organization is quite misleading.

Coast Guard headquarters is in Washington, D.C. Among the major elements of that headquarters are the offices of merchant marine safety, boating and safety, operations, marine environment and systems, and navigation (figure 6-6). Twelve Coast Guard district offices are dispersed in the Continental United States,

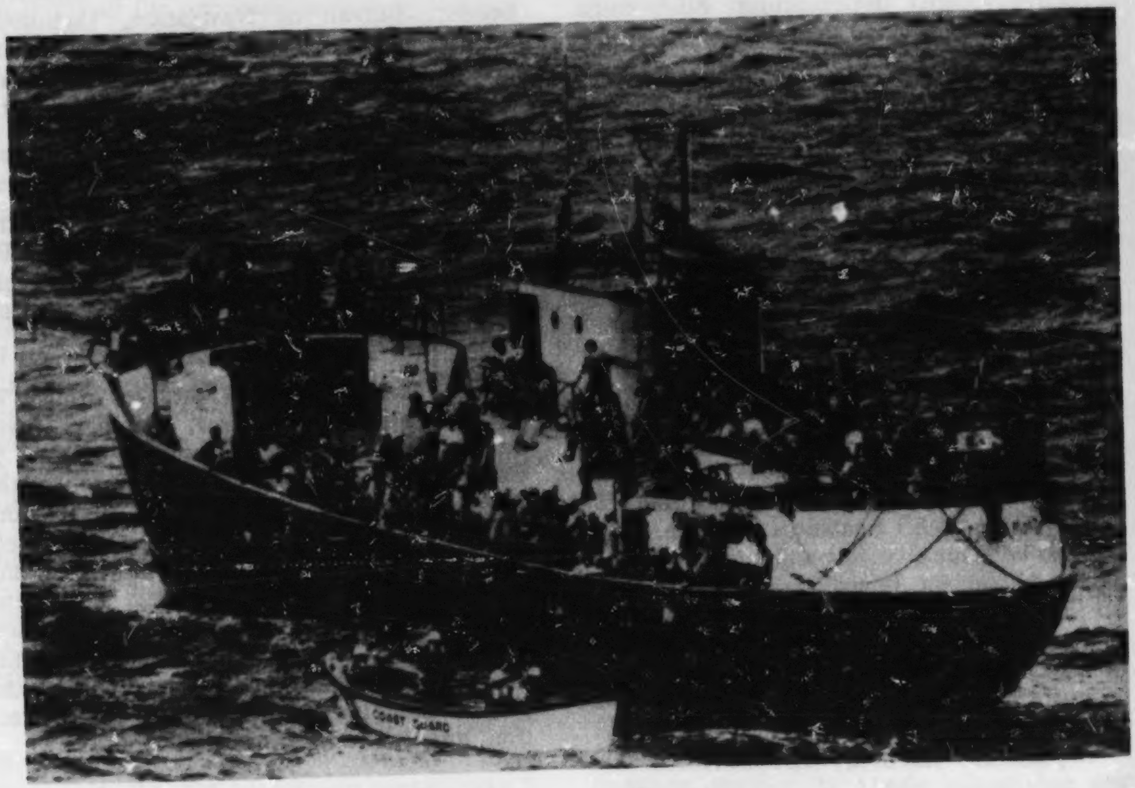

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Figure 6-5.—Coarst Guard motor surf boat gives aid to Cuban refugees.

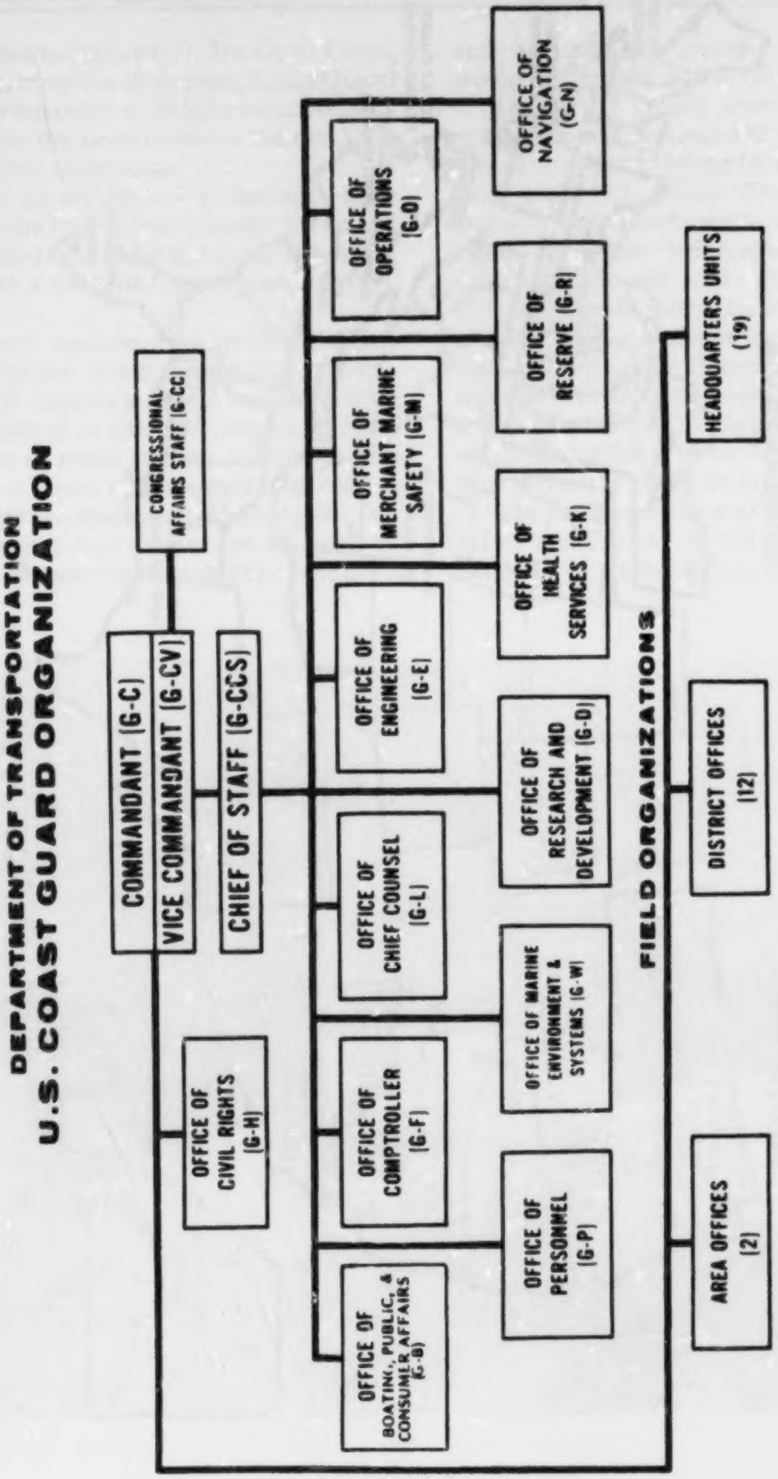
DEPARTMENT OF TRANSPORTATION
U.S. COAST GUARD ORGANIZATION
CONGRESSIONAL AFFAIRS STAFF (G-CC)
COMMANDANT (G-C)
VICE COMMANDANT (G-CV)
CHIEF OF STAFF (G-CCS)
OFFICE OF CIVIL RIGHTS (G-H)
OFFICE OF BOATING, PUBLIC, & CONSUMER AFFAIRS (G-B)
OFFICE OF COMPTROLLER (G-F)
OFFICE OF CHIEF COUNSEL (G-L)
OFFICE OF ENGINEERING (G-E)
OFFICE OF MERCHANT MARINE SAFETY (G-M)
OFFICE OF OPERATIONS (G-O)
OFFICE OF PERSONNEL (G-P)
OFFICE OF MARINE ENVIRONMENT & SYSTEMS (G-W)
OFFICE OF RESEARCH AND DEVELOPMENT (G-D)
OFFICE OF HEALTH SERVICES (G-K)
OFFICE OF RESERVE (G-R)
OFFICE OF NAVIGATION (G-N)
FIELD ORGANIZATIONS
AREA OFFICES (2)
DISTRICT OFFICES (12)
HEADQUARTERS UNITS (19)

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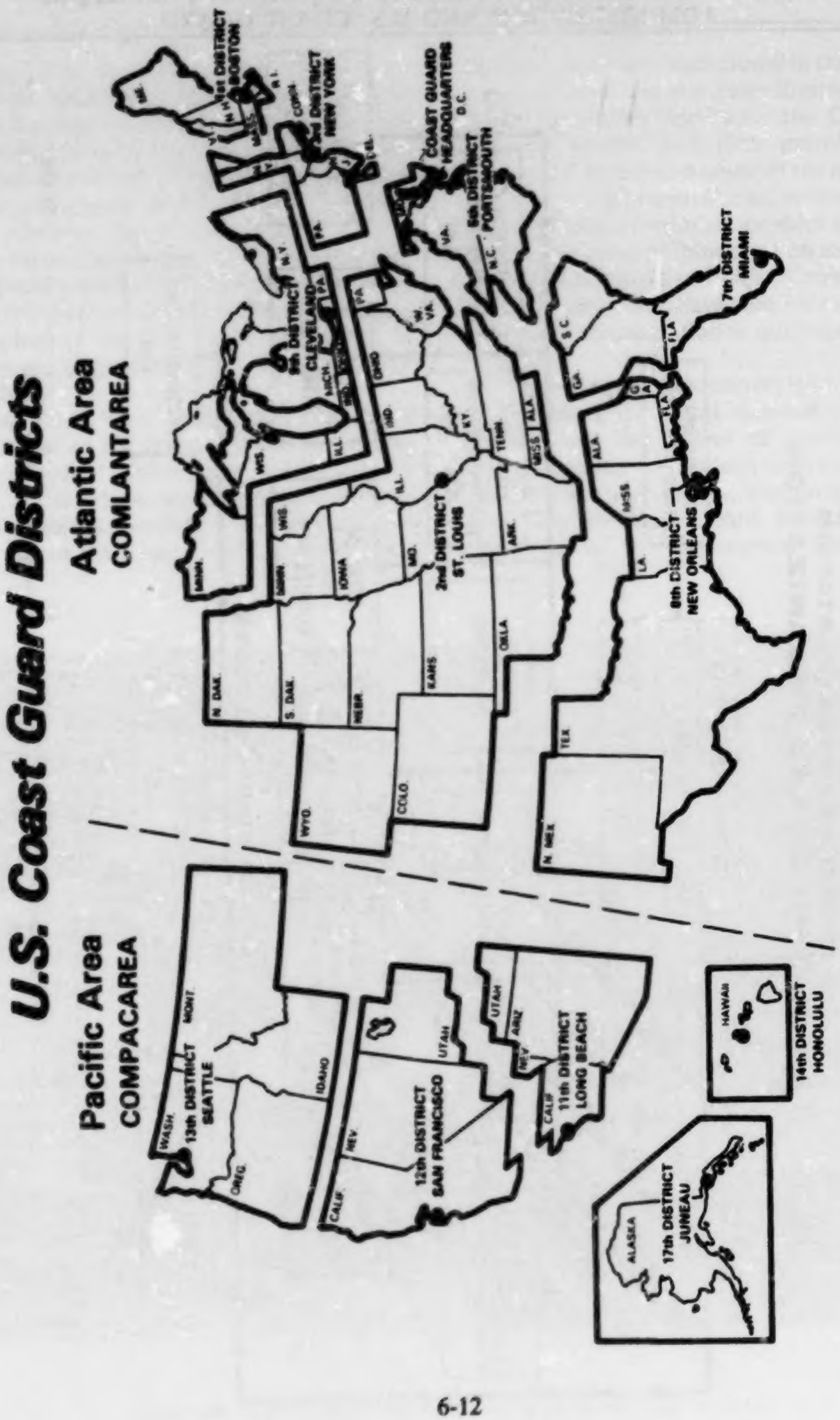
Figure 6-6.—Department of Defense U.S. Coast Guard organization chart.


U.S. Coast Guard Districts
Pacific Area
COMPACAREA
Atlantic Area
COMLANTAREA
WASH.
13th DISTRICT
SEATTLE
MONT.
OREG.
IDAHO
CALIF.
NEV.
12th DISTRICT
SAN FRANCISCO
UTAH
ARIZ.
CALIF.
11th DISTRICT
LONG BEACH
ALASKA
17th DISTRICT
JUNEAU
HAWAII
14th DISTRICT
HONOLULU
WYO.
COLO.
N. MEX.
N. DAK.
S. DAK.
NEBR.
KANS.
OKLA.
TEX.
MINN.
IOWA
MO.
2nd DISTRICT
ST. LOUIS
ARK.
LA.
8th DISTRICT
NEW ORLEANS
WIS.
ILL.
MISS.
ALA.
GA.
FLA.
7th DISTRICT
MIAMI
S.C.
N.C.
5th DISTRICT
PORTSMOUTH
VA.
W. VA.
KY.
TENN.
OHIO
IND.
MICH.
9th DISTRICT
CLEVELAND
PA.
N.Y.
COAST GUARD
HEADQUARTERS
D.C.
DEL.
N.J.
3rd DISTRICT
NEW YORK
CONN.
R.I.
MASS.
1st DISTRICT
BOSTON
N.H.
VT.
ME.

30.139

Figure 6-7.—U.S. Coast Guard districts (Chart).

Alaska, and Hawaii (figure 6-7). The Coast Guard also maintains an office in Europe. Coast Guard districts are comparable to MSC area commands and in fact bear the same names as the two U.S-based MSC area commands.

Since they are the operating elements of the organization, the Pacific and Atlantic districts of the Coast Guard would be especially important in the event of a wartime Coast Guard transfer to the Navy.

The primary wartime mission of the Coast Guard would be port safety and security, an essential element of military strategic mobility. With ships still expected to carry 95 percent or more of the volume of troop support equipment and supplies in any future war, most of that volume would pass through strategically located ports that would represent prime targets for all types of enemy action. Protecting the security of the ports and adjacent waterways would post great challenges for the Coast Guard (figure 6-8).

The Coast Guard controls the peacetime movement of all nonpublic vessels—those not owned or operated by the Government while such ships are in U.S. waters. That responsibility requires close coordination between the Coast Guard and law enforcement agencies, with Customs personnel, and with all elements of the U.S. maritime industry. To carry out a wide range of tasks, the Coast Guard assigns captains of the ports and officers in charge of marine inspection to key ports. Both operate under the control of a Coast Guard district. Usually, the two functions are combined in a Coast Guard marine inspection office for key port areas.

The captain of the port is responsible for the safety and security of the port; for movement, berthing, or anchorage of vessels within the port

30.140

Figure 6-8.—The U.S. Coast Guard patrols the coastal and inland waterways.

area; for loading and unloading operations; for storage and movement of ships' cargo along the waterfront; and for the protection of the port environment. The latter function has become particularly important because of local sensitivity to threats of oil spills and other pollution.

Coast Guard marine inspectors are responsible for enforcing all regulations pertaining to the inspection and certification of U.S. flag commercial vessels. They review the designs and functions of equipment and structures aboard ships, check certification and performance of Coast Guard-documented mariners, and investigate major accidents or incidents involving property damage or loss of life.

Other duties include enforcement of load-line requirements, safety regulations, the Federal Water Pollution Act, the Ports and Waterways Safety Act, and a myriad of other safety and environmental legislation. The Coast Guard also issues permits for hazardous operations.

The growing range of its duties in the early 1980s presented the Coast Guard with a major problem. With more and more programs being assigned by Congress to the Coast Guard for monitoring or control, the agency was stretched thin. Neither personnel nor ship assets had kept pace with the expanding role of the Coast Guard. As a result, efforts were initiated to modernize Coast Guard capability by the construction of new and often highly specialized ships. That trend is expected to continue.

MSC relationships with the Coast Guard cover the entire range of the sealift agency's area of responsibility. In some cases, the extent of that relationship is not always clear since it is not specifically covered by legislation. Coast Guard officials can, for example, cite masters of privately owned vessels and those operating under MSC charter for safety, environmental, or other violations. However, civil service masters of MSC ships are not required by law to have Coast Guard documents, although MSC does insist that they do. Whether or not possession of a Coast Guard mariners license is tantamount to the Coast Guard's authority to cite masters for violations is not at all clear. Masters can, of course, be disciplined by MSC under civil service regulations.

The Coast Guard can waive penalties for ships operating in direct support of the military. But, there are always situations in which either the facts are disputed or there is a question as to whether or not a waiver is justified. The result is that matters between the two agencies involving ship casualties, ship inspections, and comparable matters are governed by an agreement which is updated and amended as required.

MSC is not required by law to have its public vessels (USNS) inspected or certified by the Coast Guard. Neither is MSC required to employ only mariners having Coast Guard documentation. As a matter of policy, as previously indicated, MSC does both (inspection and certification). Only in those instances where military necessity requires that a public vessel sail without a Coast Guard certification does the vessel do so—and then only after determination has been made by the MSC Commander. Disciplinary matters involving MSC seagoing employees are handled by MSC—not by the Coast Guard.

In the design, equipping, and operation of its ships, and in their repair and maintenance, MSC meets Coast Guard standards as well as those established by the American Bureau of Shipping. The major exception to an agreement between MSC and the Coast Guard covering this area concerns ships not normally operated by industry; for example, MSC fleet support oilers, oceangoing salvage tugs, and scientific support ships.

SUMMARY

The Federal Maritime Commission's ultimate purpose is to serve and protect the rights and interests of the consumer of shipping service. The Maritime Administration—part of the Department of Transportation—has a different responsibility; promotion of all aspects of the U.S. maritime industry. The Maritime Administration, unlike FMC, is not a regulatory agency.

The third of the three Federal agencies involved in maritime matters is the U.S. Coast Guard. It is responsible for enforcement of U.S. laws relating to navigation, port security and safety, documentation of ships and the crews who sail them, handling of hazardous cargo, water pollution control measures, and a variety of other programs.

Military Sealift Command maintains working relationships with all three agencies. That relationship is based primarily on function-to-function coordination. But, it also involves meetings and the exchange of ideas between the MSC Commander and the heads of the other Federal agencies. Other Navy officials also are involved, as are Department of Defense representatives with responsibilities for mobility and ocean transportation.

MSC relationships with the Maritime Administration are greater in scope than with the other agencies and probably have the greatest importance since that agency represents an industry which provides assets and services essential to national security. The merchant marine is charged by statute with maintaining a capability to augment military sealift in an emergency, and the Navy relies on the merchant marine to a significant degree in meeting both emergency and peacetime sealift commitments.

CHAPTER 7

A 30-YEAR HISTORY OF MSC OPERATIONS—A PROLOGUE TO THE FUTURE

Any history of 30 years of MSC operations—beginning with establishment of the command in late 1949—must parallel the development of logistics concepts for deployment and support of the U.S. Armed Forces.

Much has changed in that period. Many changes were sparked by World War II, and technological development accelerated in the post World War II era. Soldiers in World War I faced one another from trenches, but their counterparts in World War II used wheeled and tracked vehicles that made them immensely mobile. Mobility changed the strategy and tactics of land warfare.

Still another dimension was added by development of military aircraft that served not only tactical and strategic purposes but also could be used for logistics purposes—for deployment of troops and their subsequent support.

In the 1950s during the United Nations war in Korea, the helicopter added still another dimension to the battleground. Throughout the war in Southeast Asia, helicopters were used to lift forces over enemy troops who were attacked from rear or flank as easily as by a frontal assault. They also were used as gunships—a veritable cavalry that swept in from the sky from any direction.

Concurrently with development of wheeled and tracked surface vehicles, fixed-wing aircraft, and helicopters, came instantaneous worldwide communications systems, huge cargo aircraft that could carry 60-ton tanks in their "bellies," and missiles that could be launched from mobile ground stations, from aircraft in flight, or even from submarines ranging far beneath the sea. Intercontinental missiles and missile-carrying satellites that can be positioned far above the earth assure that no nation can immunize itself from enemy attack by reliance on buffer states or vast oceans that separate the nation from a potential adversary.

Changes in weapons system technology have made modern warfare truly three dimensional. In effect, the earth has been shrunk. No one can expect to escape unscathed if even a portion of the destructive potential that man has created is unleashed by a reckless aggressor.

Even though the general nature of ships and the role they play in support of military forces have not changed to any significant degree, the demands on shipping have become greater. Sealift is more directly related to the chances for success in a major war involving the United States, for military power can be exerted only if troops and their weapons can be deployed and supported.

Ships would deliver up to 95 percent or more of the supplies, equipment, and material needed to deploy and support U.S. Armed Forces. Modern forces have a voracious appetite for ammunition, vehicles, helicopters, building materials, foodstuff, spare parts, construction equipment, clothing—the mountains of supplies that a modern fighting force consumes.

Modern cargo carriers are larger, faster, highly specialized, and more productive. They also are costly. Most of the available merchant ships are basic elements of integrated, international distribution systems inexorably tied to support of world trade and national economies. Many are unsuitable for quick deployment and immediate support of troops. Modern ships and the intermodal delivery systems of which they are part require support systems ashore, computer-assisted management, tremendous capital investments, and people who have a wide range of skills.

And yet, in future emergencies like those throughout the 30-year period ending in 1979, Military Sealift Command (MSC) is expected to provide the immediate response sealift capability for the Department of Defense. MSC also is charged with developing plans for merchant marine augmentation of its own sealift capability. Thus, a look at some of the challenges MSC faced and met in the 1950s, 1960s, and 1970s offers a fitting prelude to the era of the 1980s. A comparison of MSC history to situations which now exist may offer clues to those interested in what MSC is, where it is heading, and the challenges or rewards that may be associated with a career or even a short-term assignment to the Navy's sealift operating command.

Post World War II analysis of the tremendous logistics effort exerted in the winning of a two-ocean struggle taught logisticians several lessons. The need for better management of systems and resources was one.

Four Government organizations controlled a variety of Navy and merchant-type ships that logistically supported forces deployed in Europe and in the Pacific. Included were the Army Transport Service, the Naval Transportation Service, the War Shipping Administration, and the Navy's fleet service forces.

All four reacted to challenges on a day-to-day basis. There was no logistics contingency plan that provided for coordination, for allocation of resources, for management of those resources, or for their replacement. The War Shipping Administration was set up to coordinate over-the-ocean logistics. Its military counterpart was the Joint Military Transportation Committee. The former controlled civilian shipping; the second military shipping.

Luckily, there was time for growth, and some leeway for confusion, indecision, waste, and error. But, in a future emergency—given the quick-strike capability of far ranging missiles and atomic weapons, there may be no such cushion. Even if hostilities are restricted to conventional warfare, responsiveness is a paramount concern. Responsiveness is a product of mobility capability that exists only if the transport systems, including ships, are operational, and available.

ESTABLISHMENT OF MSC THROUGH THE KOREAN CONFLICT

To strengthen responsiveness and mobility of the Department of Defense forces, Congress passed the National Security Act of 1947. It directed the Secretary of Defense to eliminate duplication and overlapping in procurement, supply, and transportation. On August 2, 1949, the Secretary of the Navy ordered establishment of the Military Sea Transportation Services (MSTS) as the Navy operating agency for sealift. The Secretary had been made responsible to the Department of Defense as the sealift single manager for the entire department.

Ships operated by the Army Transport Service were turned over to Military Sea Transportation Service, renamed Military Sealift Command in 1970, as were ships operated by the Naval Transportation Service. Crews, both civilian and military, were assigned to the new command along with their ships.

The first commander of the new agency was Rear Admiral William M. Callaghan. Field offices were set up in Seattle and San Francisco on the west coast, New Orleans on the gulf coast, and New York City on the east coast. MSC was operational by October of 1949.

It had been no easy task. Each of the services had fought to keep control of their transportation resources. The Navy had been less than enthusiastic about accepting sole responsibility for Defense sea transportation. As Admiral Callaghan subsequently explained, "Some felt that the Navy would be saddled with vast expenditures from its own appropriations to the detriment of other Navy needs." But VADM Robert Carney, then Deputy Chief of Naval Operations for Logistics, did not accept those views, noting that the Navy could not duck its logistical responsibility. To do so might jeopardize the future of its own service forces. His views were prophetic, for MSC (formerly MSTS) has since been assigned many service force ships for civilian manning and operation, thus saving the Navy skilled manpower and millions of dollars.

In late 1949, MSC command headquarters and the area commands were manned by only a handful of people. Interservice transfer of ships, crews, and support personnel did not begin until March 1950, although the command had already received 92 ships from the Naval Transportation Service. The Army turned over 72 ships in March, another 33 in July. The transfer was completed in November 1950 when 10 Army ships operating in Alaskan waters were assigned to the sealift command. By that time, the fledgling organization was already deeply involved in support of United Nations forces in Korea—as well as supporting U.S. military forces worldwide. That involvement had begun even as the bulk of the Army's troop transports were being transferred to the Navy's sealift operating agency.

The Navy also had begun to forge the strong ties that now exist between its sealift operating agency and the U.S. maritime industry. In July 1950, the sealift command had only six privately owned merchant ships under charter. That number rose to 335 at the peak of the war in Korea. Another 130 ships were taken out of the National Defense Reserve Fleet (NDRF) and were operated by the command.

An example of the magnitude of sealift requirements generated by the war in Korea, and by other world events taking place simultaneously, is the fact that the Maritime Administration activated 602 ships from the National Defense Reserve Fleet (figure 7-1) in the first 12 months of the United Nations war in Korea, a total of 778 in an 18-month period. Those ships not operated by MSC were bareboat chartered to private carriers. Some of the carriers then chartered the ships to MSC so the actual number of NDRF ships MSC had in its controlled fleet was perhaps as high as 300.

Not all of the 778 ships eventually activated from the NDRF operations supported U.N. operations in Korea. A severe winter storm in Europe in 1950 caused shortages of coal. Ocean freight rates tripled in a short period of time. Ships were in short supply, and NDRF ships were made available to private carriers to meet pressing needs for service to and from Europe. At almost the same time, the newly founded democratic government of India was wrestling with severe food shortages that followed crop failures. Marshall Plan aid was critically needed there, as in Europe, and NDRF ships were activated to help deliver cargo.

This was the environment MSC operated in as it sought to fulfill military sealift requirements in Korea—one in which there was strong competition for shipping services provided by the merchant marine. Luckily, the post World War II reservoir of merchant ships was large, a situation that no longer prevails.

Expansion of the sealift capability in an emergency, one of MSC's five missions, was no easy task. According to the first command contracting officer, he had to appear before the Maritime Administration and Federal Maritime Commission every time the command sought to activate a ship from the National Defense Reserve Fleet. Any carrier could oppose such an action and carriers were fearful that a Government-owned ship might be used to carry cargo they considered to be rightfully theirs.

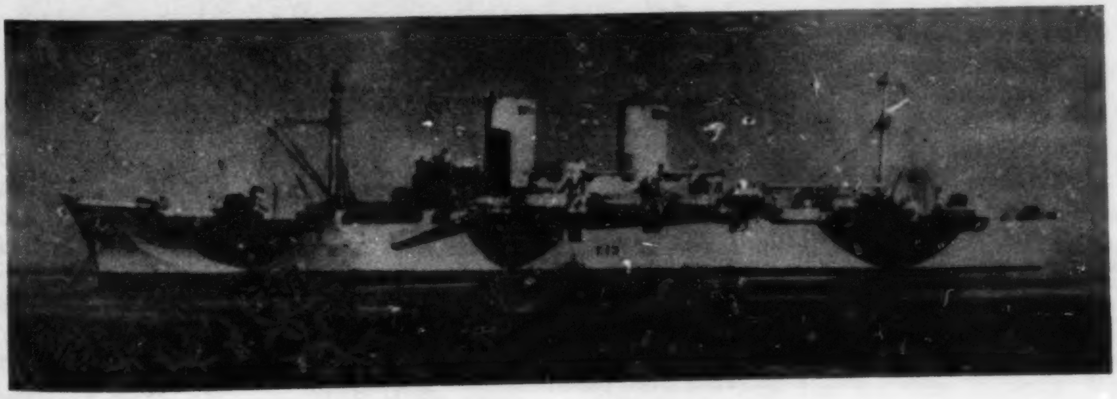


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Figure 7-1.—W.W. II vintage liberty ships were taken from the National Defense Reserve Fleet (NDRF) to support United Nations operations in Korea in the 1950s.

Shortages of suitable merchant ships were compounded by the situation in Korea where ships waited weeks, sometimes months, to be unloaded. Not only did that delay increase transportation costs, it also helped reduce the supply of ships available for charter. At one time, MSC contracting officials even considered chartering a sail-driven cargo ship. Its 5,000-ton payload capacity and 8-knot speed compared favorably to the Liberty ships being used, and it would have cost only $5,000 per month as compared to $1,700 per day for a Liberty ship. The deal fell through when it became apparent that it would be difficult to find American seamen able to man the sailing ship.

At Inchon, Korea, in late 1950, MSC controlled ships were being unloaded around the clock. Throughout the 3 years of the war in Korea, MSC (then MSTS) provided a figurative bridge across the Pacific. In December of 1950, 193 Government-owned and chartered ships made an emergency evacuation from Hungnam (figure 7-2). More than 105,000 soldiers, 91,000 civilians, 17,500 vehicles, and 350,000 tons of supplies were moved southward. One chartered ship, the SS *Meredith Victory*, carried more than 14,000 civilians to safety from Hungnam. The ship departed only hours ahead of advancing enemy forces.

To help alleviate port congestion, MSC began diverting ships to Japan; then delivering their cargo to Korea in smaller feeder ships. Faster turnaround of the over-the-ocean cargo helped reduce the demand for more ships. During the 3-year period before the war in Korea ended, the Navy's sealift operating agency lifted more than

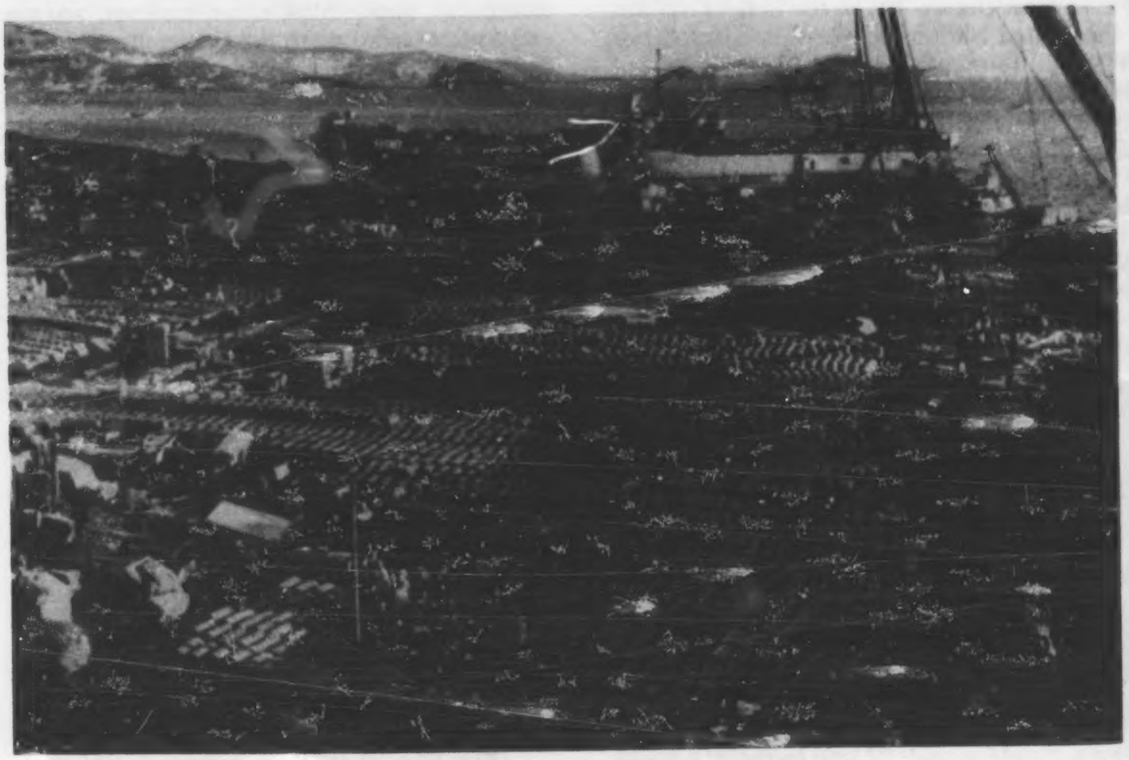

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Figure 7-2.—MSC ships and crews evacuated both troops and their supplies and equipment from Hungnam, Korea when communist forces were nearing the area.

54 million measurement tons of cargo to that area. More than 5 million troops also were transported as were 22 million long tons of petroleum products needed to fuel military equipment, aircraft, and vehicles.

At the same time, the command was meeting sealift requirements of the forces literally around the world. Turkish, Greek, Dutch, and other United Nations troops were lifted from their homelands to Korea. Mules and horses were delivered to Turkey, Greece, and other Mediterranean countries—700 to 800 per ship—for use both by military forces and by farmers. Families of U.S. military men and women were transported to and from European assignments. Refugees from many nations were frequently lifted in command-operated troopships.

During the war in Korea, command ships returned the sick and wounded to the United States. Following the end of the war, prisoners were lifted to their homelands, including 3,000 Americans who had been prisoners of war. Another 14,500 Chinese prisoners were transported from Korea to Formosa.

The Korean war ended in 1953. At the peak of its operations in support of forces there, the sealift command controlled 602 ships and small craft. By June of 1954, that total had been reduced to 295. It was the first example of an MSC buildup to meet an emergency and a subsequent sharp reduction in both assets and capability. That pattern would be repeated in subsequent years.

MSC OPERATIONS IN THE 1950s

Other highlights of MSC operations in the 1950s included the evacuation of thousands of refugees fleeing North Vietnam in 1954 and a massive effort to support air base and Defense Early Warning (DEW) line construction in the far north. In 1955, more than 118 ships were involved in MSC managed Arctic operations, most of them command operated. Included were 59 dry cargo ships, 11 tankers, 4 passenger vessels, 10 icebreakers, and 34 other craft. Among the "other craft" were MSC operated LSTs that traversed dangerous Arctic waters to deliver construction material on the beach. Where beaches were inaccessible, helicopters and lighters were used. Floating ice, freezing winds, snow, poor visibility, and the danger of being frozen-in were constant threats to those who helped write the initial Arctic chapter of MSC history.

In 1955, the sealift command transported the entire 10th Infantry Division to Europe. Called Operation Gyroscope, the recordbreaking lift included 36,000 soldiers; 8,000 wives, sons, or daughters; and 9,500 tons of household goods. A year later, another MSC managed force of 117 ships and 16,000 men took part in Arctic Operations 1956. While MSC ships and people supported Arctic operations their comrades-in-arms were active at the opposite pole. More than 11,000 tons of cargo were delivered to McMurdo Sound and Little America, an on-the-ice scientific station, by an MSC manned ship (figure 7-3).

Following the Hungarian revolt, a revolt crushed after Soviet intervention in 1957, MSC ships again lifted thousands of refugees. More than 21,500 were transported from Bremerhaven, Germany to New York. In 1957, several thousand Greeks and Hungarians were sealifted to Australia aboard MSC manned ships.

It was military crisis time again in July 1958 when trouble, which resulted in United Nations intervention, erupted in Lebanon. MSC was tasked to provide troop transports, cargo ships, and tankers to supply U.S. forces in the Mediterranean area. That emergency provided another test of MSC's ability to rapidly augment its own resources with commercial assets.

A week and a half after the U.S. Marines had gone ashore in Beirut, MSC had chartered an additional 13 cargo ships and 15 tankers—all used to meet emergency needs that could not be met by the command's Immediate-Response Sealift Force.

The entire era of the 1950s, the first decade of MSC operations, was one marked by world crises. It was the era of the Cold War. Tensions ran high. Populations were shifting and the transportation of refugees was a frequent MSC assignment. The Berlin airlift and the crises in Korea and in Lebanon, both involving the United Nations, created sealift requirements for support of contingency forces. MSC's procurement function was tested and met the tests. The command's relationship with the maritime industry was developed and flourished. Navy reliance on the NDRF for emergency augmentation was challenged and ships were made available. Most

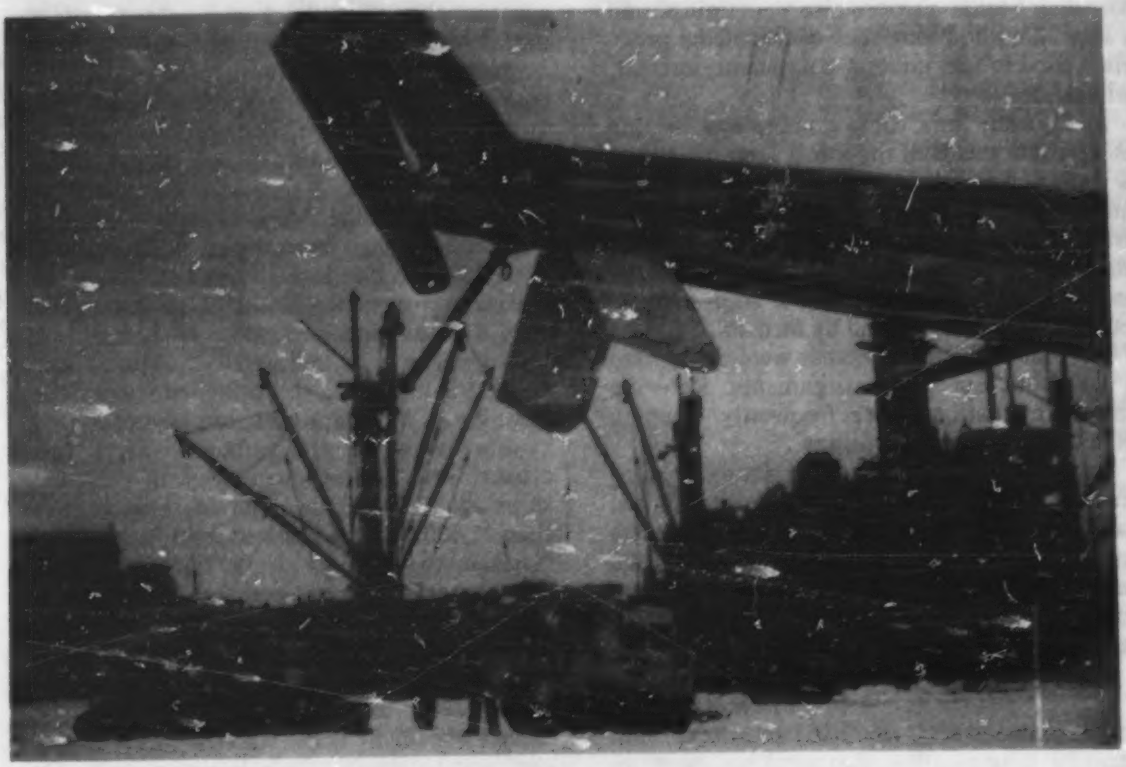

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Figure 7-3.—USNS Greenville Victory. MSC ships supplying Deep Freeze participants during snowstorms in the Antarctica in the mid-1950s.

important of all, the expectations of those who had pushed for single managership for DOD sealift were fulfilled.

Under MSC management, ships and skilled people combined to support construction of military bases and the DEW line in the far north (figure 7-4), scientific operations in the Antarctica, the Berlin airlift, and United Nations troop commitments in Korea and Lebanon; and to provide humanitarian special lifts for refugees and to respond to almost any lift requirement no matter how unique or where it might be.

The command controlled as many as 60 troopships in the 1950s; some configured for carriage of wives and families, others austere ships designed for troops alone. Several different types of dry cargo ships—including heavy lift ships—were operated by the command. They sailed in and out of ports never visited by fleet ships and where water depths were both shallow and sometimes uncertain, or where icebergs, submerged rocks, and other hazards posed tremendous dangers. MSC also operated a varied group of tankers that were small and medium-sized carriers. LSTs were on station in the Arctic and in the Pacific. The latter were often manned for MSC by Japanese and later by Korean nationals.

Among the most unique ships in the MSC controlled fleet in the 1950s were four small aircraft carriers (figure 7-5). Used in World War II in convoy operations, they were an effective, efficient, and economical means of delivering military aircraft. The carriers were all MSC hallmarks. An ironic footnote to subsequent MSC history was the delivery of aircraft to French forces in Indochina in 1951. USS *Wyndham Bay*, an MSC

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Figure 7-4.—MSC ships moved much of the equipment and supplies to Thule, Greenland—present site of a U.S. air base.

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Figure 7-5.—Aircraft carriers operated by MSC, then MSTS, in the late 1950s and 1960s. This is USS Tripoli.

aircraft carrier, sailed 45 miles upriver to deliver the aircraft to Saigon. Saigon later became better known to American fighting forces as the capital city of South Vietnam. In the early phase of Delta, another MSC aircraft carrier, USS *Corregidor*, delivered 37 Thunderjet fighter aircraft to Europe for use by the forces of NATO countries—Norway, Denmark, Belgium, the Netherlands, and France.

In the 1950s, the United States was the dominant force in international relations. The Marshall Plan helped rebuild war-devastated Europe. The North Atlantic Treaty Organization (NATO) was formed to promote mutual security, and American industry supplied much of the weapons, ammunition, and support systems needed by NATO forces. Similar aid was given nations in the Pacific Ocean area, and U.S. forces were stationed almost literally around the world to help maintain the hard-won peace. The United Nations was founded, and the United States provided most of the mobility resources needed to support U.N. intervention in several major crises. Military Sea Transportation Service (now MSC) was the hub of the logistical support wheel whose spokes ran from the United States to its many allies.

Within MSC, operational tasks were performed by the area commands, by resourceful and innovative people who scheduled ships, booked cargo, supervised a farflung marine work force, maintained and repaired ships, lifted passengers and cared for their needs, and who kept in constant touch with industry. They saw the need for coatings that could be applied inside tanker tanks and pipelines, and MSC worked with industry in development of new types of coatings. The move from Saran to epoxy coatings was made in just a few years. Another early MSC innovation was construction of a deck—a metal deck put together somewhat like an erector set—that enabled aircraft to be transported aboard tankers. That substantially increased MSC productivity in delivery of aircraft to U.S. allies.

A significant innovation that cut transportation costs was made soon after the sealift command began operations. Under the old Army space contracts with commercial carriers, they were paid for a specific amount of shipboard space whether or not all of that space was used for cargo movement. Those agreements were converted to shipping contracts under which the command paid only for space actually occupied by Government cargo, at agreed upon rates for various routes.

Another management action to make sealift operations more efficient was the military takeover of ship loading and unloading operations. Previously, the carriers loaded and unloaded military cargo and charged the services for the longshoreman functions they provided. New contracts were "free-in-and-free-out" awards under which the carrier had no responsibility to load or discharge military cargo.

As the number of vehicles in the military arsenal expanded, MSC innovators put false decks in breakbulk ships to increase their carrying capacity. That ultimately led to pioneering efforts by MSC that resulted in the construction of the roll-on/roll-off ship USNS *Comet*, in 1957. *Comet* was then highly suitable for carrying both wheeled vehicles and helos. The ship could land cargo even when port facilities were limited. Use of air hoses that bubbled warm water from the bottom of Arctic port areas to the surface delayed freezing, and thus kept Arctic ports open. That too was an MSC innovation. So was installation of rollers on the bottom of an LST to make sure it could beach its cargo without damage from the coral reefs. In MSC, ingenuity seemed to be routine. The seemingly impossible often took just a little longer.

In 1958 an entirely new function was added by the Navy's sealift operating agency when its skilled mariners began operating ships involved in oceanographic research. Because of its track record, whenever there was a need for performance of a unique sea-related task, the new Navy sealift agency was a logical candidate. It was, after all, only a small jump from operating troopships, cargo carriers, and tankers literally around the world to the manning and operation of ships involved in special projects. In 1958 four ships, all oceanographic survey vessels, were assigned to MSC.

MSC accomplishments in the 1950s were aptly summed up by VADM William Callaghan, its first commander, in a speech he made even before the era of the 1950s had ended. He said:

> "The elimination of overlapping and duplication of ocean transportation functions between the Army and the Navy and the consolidation of routes and schedules have not only saved the Department of Defense an enormous amount of money, but have resulted in the greater availability of assigned shipping, thus increasing capabilities.
>
> The relationship between the Navy and the American merchant marine is now extremely close, practical, and mutually advantageous, in contrast to the previous nebulous liaison existing between the two. The mutual advantage extends to the U.S. taxpayer who is perhaps the greatest beneficiary of the new order."

The decade of the 1950s was one in which free world nations were seeking to build a lasting peace while simultaneously rebuilding the devastation that World War II had wrought. But Communism posed a continuing threat to world peace. The United States joined with its allies in a number of mutual security agreements—NATO, SEATO, ANZUS, to list a few. The United Nations was founded, to a great extent, because of U.S. leadership. And when the United Nations voted to take collective action during crises, it was the United States that provided much of the capability needed to lift forces to a troubled land, to deliver military aid, or to transport refugees to freedom. It was the Military Sea Transportation Service that provided needed sealift capability in almost every instance. At the same time, the Navy's sealift operating agency maintained the logistical lifeline between farflung U.S. forces and the United States.

The 1950s were also a decade in which crisis management was "business as usual" for a troubled world in search of stability. Within MSC, a group of highly experienced and skilled people, challenged to create a new organization while simultaneously responding to demands generated by an era-long series of crises, did their jobs and did them well. They established a reputation for themselves and the organization they represented that is unmatched. The tasks they performed were unique in that they can never be repeated. The manner in which they were fulfilled can never be equaled. While history does seem to repeat itself, the events which took place in the 1950s and MSC actions can never be duplicated.

Resources were plentiful in the 1950s. More than 5,300 merchant ships had been built during World War II. Many were available or in reserve anchorages. The war-generated industrial base in the United States still existed. It was, in fact, a key reason why the United States was able to rearm allies and help rebuild shattered economies. A highly skilled maritime work force also was available. The United States gave generously of its wealth to help other nations rebuild. Thus, the primary concern of MSC management during that period was operational.

Most ship operations in the 1950s began with MSC allocation of resources to meet requirements. Some troopships operated on scheduled routes, but most command ships were sent or diverted to the point they were needed to pick up cargo or people and transport either or both to a specific destination. Long-term planning or financial management, energy conservation, resource allocation and acquisition, fleet maintenance, repair and replacement, and public awareness of sealift's role in national security were not the concerns they were to become in the 1960s and 1970s.

MSC OPERATIONS IN THE 1960s

One significant change in MSC operations during the 1960s was the growth of special project operations—a nontransportation function now known as scientific support. At the beginning of the 1960s, MSC had about 20 ships in its special project fleet. Before the end of the decade, in 1968, that fleet reached a peak of 45 ships.

USNS *Range Recoverer* supported astronaut Gordon Cooper's orbital flight of the earth (figure 7-6). Other special project ships provided instrumentation and communications support for the National Aeronautics and Space Administration's pioneering probes into space, flights that eventually landed man on the moon. USNS *Mizar*, converted for support of Naval Research Laboratory (NRL) operations, located the missing submarine USS *Thresher* in 1963. Five years later, the same ship located and photographed another missing submarine, USS *Scorpion*, laying in 10,000 feet of water. That search took 5 months, in all kinds of weather, with little time in port for either the ship's crew or NRL technicians.

Special project ships operated by MSC in the 1960s included those that:

1. Lowered huge arrays of transducers through ship bottoms to track enemy submarines (figure 7-7).
2. Served as scientific laboratories for National Science Foundation research efforts in the Antarctic.
3. Recovered space capsules after their return from orbits of the earth and splashdown in the ocean.
4. Supported testing operations of Navy and Air Force missile test centers.
5. Laid and repaired under-ocean communications cables.
6. Helped locate sunken ships and lost submersibles.
7. Shuttled huge Saturn rockets from their "birthplace" in California to launch sites at Cape Canaveral and provided floating helicopter repair facilities for the U.S. Army.

MSC also operated intelligence gathering ships comparable to the military-manned USS *Pueblo*, the intelligence ship seized by North Korea.

As the decade of the 1960s neared its end, MSC began to lay up some of its special project ships. Others were occasionally placed in reduced operating status. The driving force behind the streamlining of the special project fleet was funding. Cutbacks in appropriations and subsequent trimming of programs eventually caused ship layups and some reduction in the size of the MSC seagoing work force.

But the seed of a new MSC function had been sown in the late 1950s. It flourished in the very early 1960s when MSC controlled tankers began refueling Navy fleet ships at sea while underway.

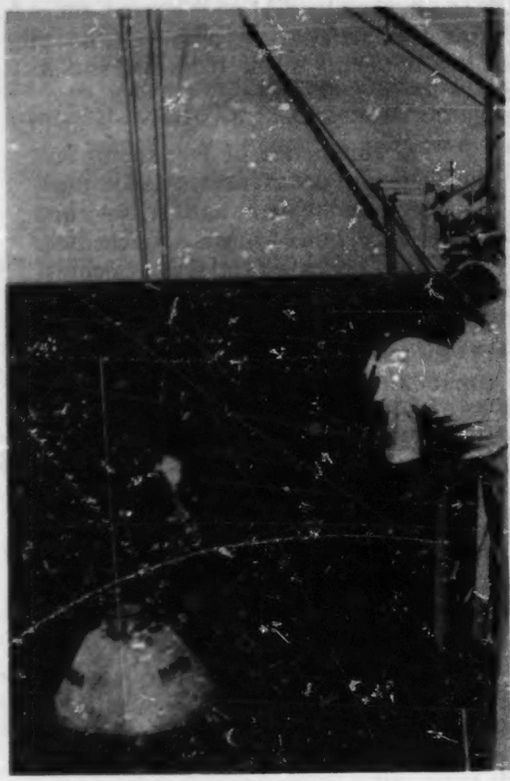

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Figure 7-6.—An MSC ship and crew. Pickup and return of NASA spacecraft.

Refueling at sea was no novelty for the fleet which did it as early as World War I. Underway replenishment was relatively routine for the Navy fleet in World War II (figure 7-8). However, most underway replenishment operations were between fleet oilers or stores ships and the combatants. Civilian manned ships were seldom used for at-sea deliveries to fleet vessels.

One reason is that a civilian tanker crew—then numbering about 45—was far smaller than the crew of a Navy manned oiler which had nearly 300 men per ship. Another reason was the fact that tankers delivering fuel point to point were not equipped for alongside, underway refueling operations. MSC solved that by installing

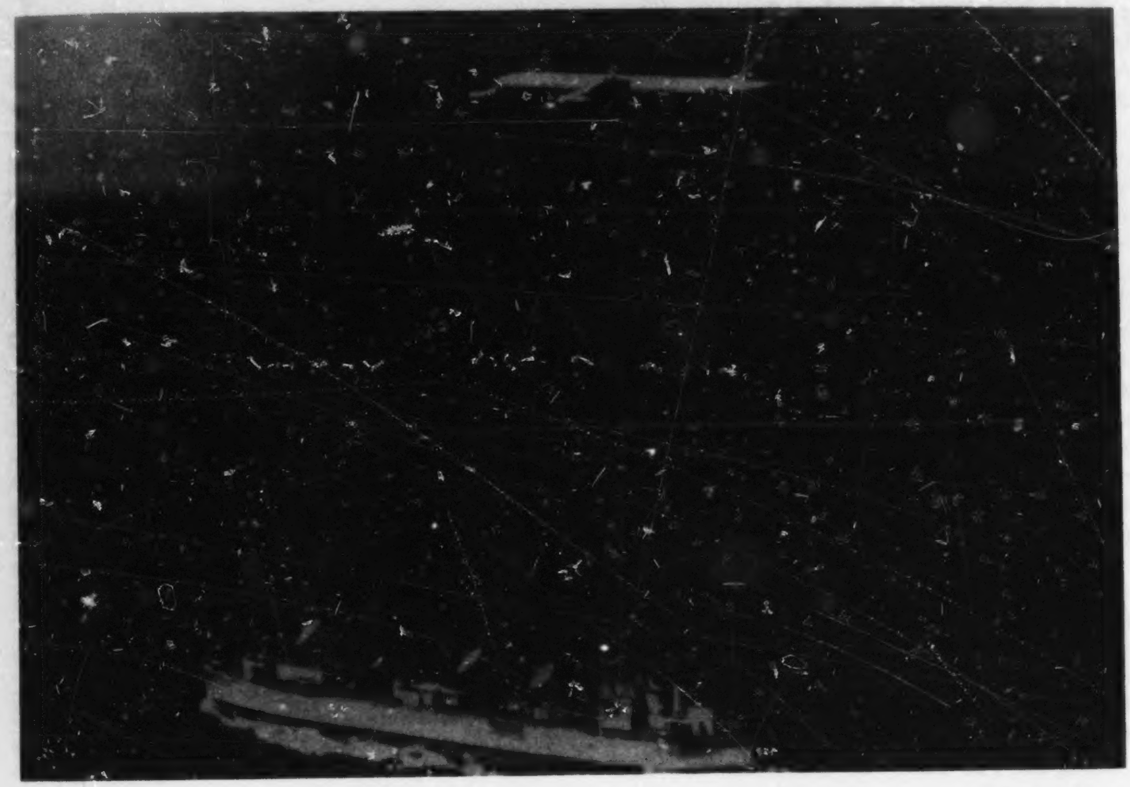

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Figure 7-7.—An MSC operated range tracking ship and an Air Force aircraft performing comparable missions.

A-frames—two on each side of some of its contractor operated and Civil Service manned tankers. Hoses with quick hookup couplings extended from the fuel lines to the bases of the tripods. Qualities most needed by the tanker crew were normal deck skills, a capacity for hard work, and outstanding seamanship. Shiphandling is critical when two ships steam side by side about 120 feet apart and connected only by fuel-filled hoses.

MSC operations in the early part of the 1960s were in reality a continuation of the 1950s. In Fiscal Year 1960, for example, the command delivered 10.9 million measurement tons of dry cargo and 14.6 million long tons of petroleum products; lifted 443,000 passengers of whom 270,000 were troops; and spent $358.6 million. Seventy-four percent of that money went directly into maritime industry coffers—again demonstrating MSC's historic reliance on industry for both peacetime service and wartime augmentation.

MSC ships and managers began a second decade of Arctic and Antarctic operations. They also were responsible for ferrying aircraft (figure 7-9) to U.S. allies; movement of troops, their families, and household goods; and the delivery of ammunition, equipment, and all of the supplies needed by deployed U.S. forces. MSC innovators rigged roller and hopper systems to load obsolete blockbuster bombs and other explosives and take them to sea and dump them; they handled the delivery of a complete nuclear power plant from Buffalo, New York to Thule, Greenland to heat and power a complete under-the-ice city; and they developed and used

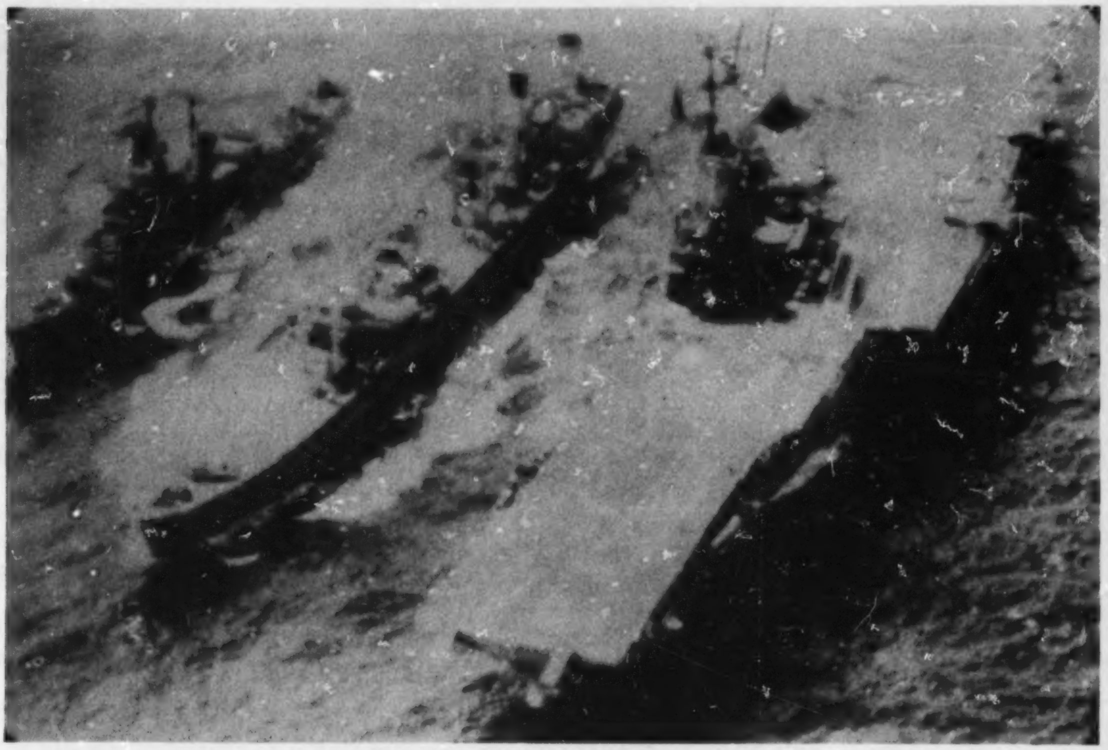

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Figure 7-8.—UNSN Taluga refueling an aircraft carrier.

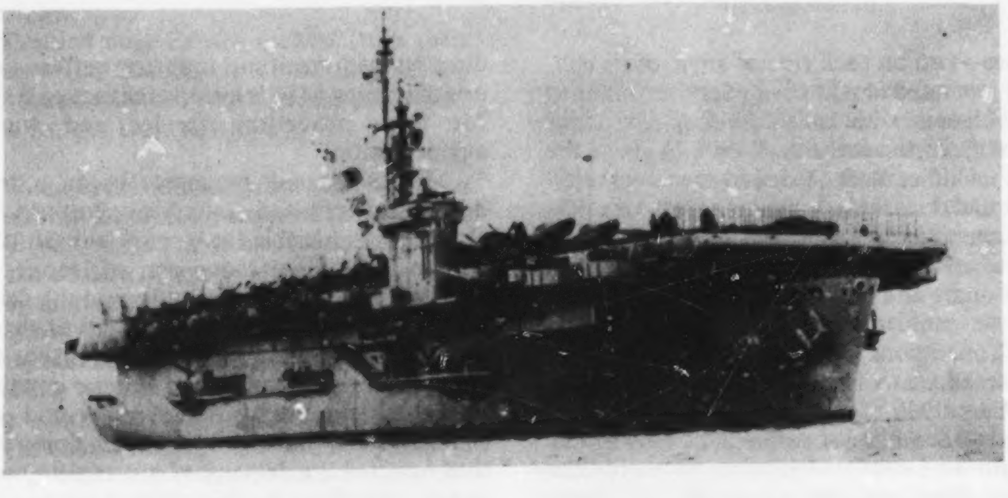

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Figure 7-9.—USS Cape Esperance (CVE 88) was used by the Navy to transport and launch aircraft.

self-sustaining heavy liftships to deliver railroad locomotives and even heavier outsize cargo to distant ports. MSC mariners navigated through dangerous ice to support a Pribilof Island sealing station in the Western Arctic, and returned with a $15 million load of seal skins; and they lifted technicians and equipment to Canton Island in the Central Pacific to build a telemetry station for the National Aeronautics and Space Administration.

MSC mariners also continued to risk their lives to save those of their fellowmen. They made numerous rescues at sea and humanitarian lifts of people, equipment, and supplies. Some rated headlines and some were appreciated only by the people involved, but sometimes credit was only delayed. In 1960, a congressionally approved Gallant Ship award was presented to the crew of the SS *Meredith Victory*. Ten years after that, the MSC controlled ship evacuated more than 14,000 Koreans from Hungnam only hours ahead of an approaching enemy.

The big news about Military Sealift Command in the 1960s, of course, stemmed from its efforts to support military forces involved in the war in Southeast Asia. That war was to have a profound effect on logistical support concepts. Actually, the change was initiated in the mid-1960s; well before U.S. involvement in the Southeast Asia war was stepped up. MSC participated in what became a turning point in logistical support operations and in U.S. military policy.

A relatively small joint mobility exercise called "Big Slam—Puerto Pine" was conducted to determine to what extent aircraft could be used to lift troops, equipment, and supplies in an emergency. Aircraft involved were prop-driven. The fuel needed to ensure round-trip capability for the more than 250 Military Air Transport Service (now MAC) aircraft was positioned in Puerto Rico by Military Sea Transportation Service tankers.

The subsequent change of names for the two transportation operating agencies involved—now Military Airlift Command (MAC) and Military Sealift Command (MSC)—illustrates to some degree the changes sparked by the successful air deployment of 22,000 troops and their return to the continental United States. Both agencies became commands, not services. Lift was their middle name, and mobility was the name of the new game. Airlift had come of age. Puerto Pine was a starting point for the rapid development of military airlift. The first military aircraft designed for cargo movement was the C-141 Starlifter. It was followed by the C-5 Galaxy, an aircraft so large it could handle M-60 tanks.

During the same period, with troops beginning to move both by passenger liners and by air, MSC began laying up troopships. The number of active troopships was already down to 16 in the early 1960s. Although the United States did not withdraw from its mutual security agreements, it did withdraw some of the military forces already deployed—particularly those in Europe. To reassure allies that U.S. security commitments would remain in effect, the United States conducted annual deployment exercises to demonstrate that airlift could reinforce forces already in Europe within a relatively short period. There they would join with equipment and supplies prepositioned for their use—tanks, trucks, artillery pieces, etc. The premise that U.S. forces could be deployed to Europe in sufficient time to reinforce NATO forces already stationed there was based on three elements: prepositioning of equipment, airlift of troops when needed, and resupply of those forces by sealift. Priority given sealift in the 1960s, however, was not great.

Each year U.S. troops were airlifted to Europe to take part in NATO maneuvers to remind European nations that they could depend on American help. But not until 1976 was sealift given a role in the annual exercises known as Reforger. A primary reason for this was that Department of Defense scenario planners were primarily NATO oriented. They did not anticipate significant U.S. involvement in Southeast Asia, the Middle East, or other regions on anything other than a limited scale. In a NATO contingency, they reasoned, the combination of NATO shipping and the previously always-available merchant marine augmented by the reserve fleet would be sufficient to meet military requirements.

It is axiomatic that airlift and sealift were never competitive modes of transportation. Both are essential to military mobility—airlift to speed high priority cargo to its destination, and sealift to deliver the veritable mountains of supplies those forces consume. That view was confirmed dramatically and effectively during U.S. involvement in the war in Southeast Asia.

MSC involvement began in the mid-1960s. Once again, MSC relied on the merchant marine for augmentation. Once again ships were activated from the NDRF—172 of them. Troopships were put into operation early in the war and moved about a half million troops before gradually giving way to faster and more economical airlift. But lessons began to emerge and became crystal clear following the end of the Southeast Asia war and the development of troublesome situations in the Middle East. Between wars, ships in the NDRF became old and were unreliable. The merchant marine had diminished in numbers of ships, but not in overall productivity, and newer ships often were specialized, large, nonself-sustaining, and limited in number.

The MSC controlled fleet, the base point for sealift expansion, also was limited in numbers. From 1960 until the buildup in South Vietnam began, the MSC fleet averaged about 85 ships. At one point, the chartered fleet was down to two vessels. In 1962, the controlled cargo-passenger fleet consisted of 82 ships—16 transports, 34 deep draft dry cargo ships, and 32 small cargo ships. Approximately 50 tankers also were available.

The biggest change in merchant marine technology since steam replaced sail was in full swing in the industry. The container revolution has been launched (figure 7-10). Container ships were faster, larger, and highly specialized, but not especially suitable for military operations unless port facilities were available to support their loading and discharge. Such facilities did not exist in South Vietnam. Breakbulk dry cargo ships were more ideal for military support, but their numbers were somewhat limited. The longer they swung at anchor waiting to be discharged, the more ships were needed.

More than 170 ships were taken out of the NDRF by MSC, and almost all of them operated for MSC under General Agency Agreements (GAA) negotiated by the Maritime Administration with private carriers. Many foreign flag ships had to be chartered by MSC—both dry cargo ships and tankers. Luckily, the foreign flag ships were reliable. Despite subsequent war stories, there were only one or two instances when political issues delayed a sailing. In all but one instance, those delays were attributable to crew

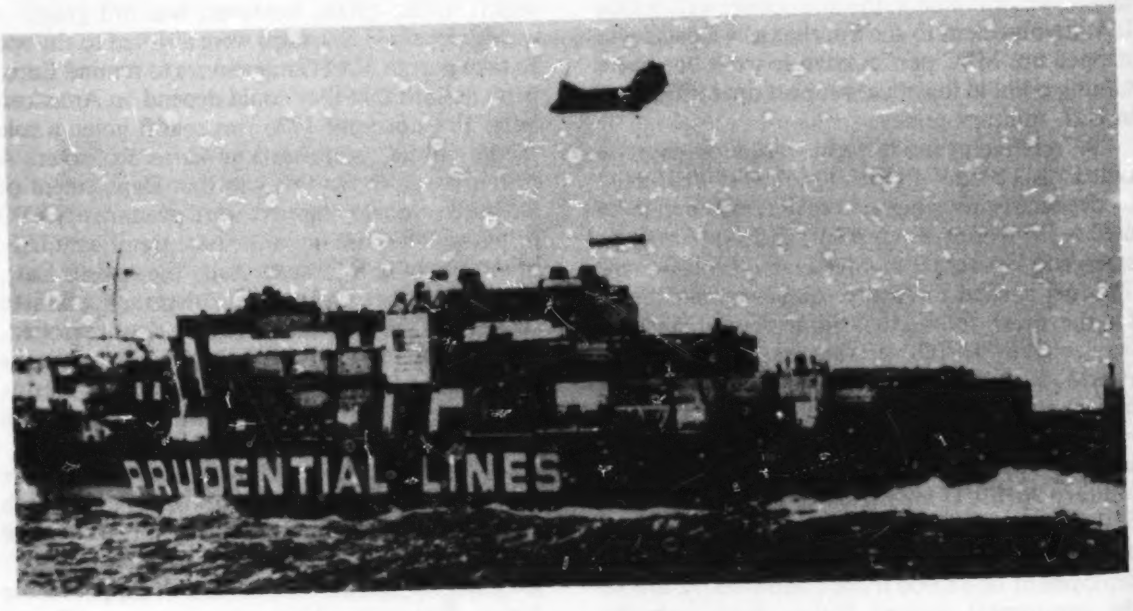

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Figure 7-10.—A container ship with cargo being removed while in transit.

actions rather than the owners or the foreign governments.

There were, however, a significant number of delayed sailings because skilled crewmen were not readily available. Ships often sailed despite crew shortages. While the manpower pool in the 1950s had been large because of World War II training and employment, many mariners already had left the maritime work force. They were not easily lured back in the 1960s for what promised to be temporary shipboard assignments.

Though the number of ships in the MSC nucleus fleet—then largely Government-owned—remained relatively constant, the controlled fleet which included chartered ships was rapidly expanded. It eventually totaled 436 ships, including 172 GAAs and 167 time-chartered dry cargo ships. As the war progressed and the logistical load increased, the early problems of port congestion and ship delays were resolved.

Construction of more sophisticated port facilities allowed greater use of intermodal carriers, notably container ships. Their high speed, great capacity, and rapid turnaround time decreased cargo in-transit time, reduced cargo loss, and limited damage to cargo. On the negative side, container ships soaked up cargo that was ideal for bottom-stow on breakbulk ships and made it much more difficult to ensure high utilization of space. That, however, was more of a problem in the postwar period than it was during the war.

Container ships soon demonstrated they could carry a broad cross section of military cargo. Foodstuff could be packed in containers in the field or at a processing plant and delivered to the very hands of the consumer. Vehicles, ammunition, spare parts, clothing, all could be lifted in containers loaded and sealed at field, factory, or depot. To facilitate the flow of cargo from supplier to user, MSC provided through shipping systems by contract with carriers, an early example being awards to SeaLand Service, Inc., for Vietnam support. That carrier spotted its boxes at the depot, field, or factory; shipped them over land to the ports by truck and rail; moved them over the oceans; and again moved them over land to the user's door. MSC still provides that type of intermodal ship-through service. Rates are published by the command so that the users know exactly what shipments will cost.

Another pioneering MSC effort in Southeast Asia was MSC procurement of tug and barge services under contracts with four private carriers. Similar service previously had been provided by MSC in Alaska, primarily for over-the-beach logistical support of DEW line operations. In Southeast Asia, contractor-provided services (figure 7-11) were even greater in scope. Contractor employees were as much a part of combat operations as were uniformed troops.

The MSC agreement with Alaska Barge and Transport (AB&T), Inc., began with a letter contract negotiated on the spot in South Vietnam in 1965. There was not even a firm requirement although the Military Assistance Command, Vietnam knew they desperately needed a means of lightering cargo from the hundreds of ships anchored in the Saigon Basin and other ports. Neither Army nor Navy had the equipment or personnel needed to move military cargo in coastal waters and up and down the winding South Vietnamese river system. AB&T had know-how, persons who had for years moved cargo over the beach and through ice-infested waters of the far north. Armed with the letter contract, AB&T put together a work force of experienced loggers, truck drivers, equipment operators, fishing boat operators, and tugboaters—people experienced in handling tugs, barges, and all of the equipment needed to support a wide variety of operations in a strange country tens of thousands of miles away from Alaska or the U.S. west coast.

Long on experience and dedicated people, but short on money, AB&T had to buy up tugs, barges, and equipment and tow their assets to South Vietnam, crossing the Pacific Ocean and South China Sea. Once there, they went to work clearing the ports of several hundred ships waiting to be discharged. Barges were sunk, positioned above one another, and then raised and welded to make multiple deck units. Others were equipped with ramps and motors, and became roll-on/roll-off barges. Barges and LSTs were sunk to make over-the-beach loading ramps. Old equipment was repaired by fabricating parts or scouring the junkyards. Eventually, AB&T constructed its own machine shop to maintain a growing inventory of equipment.

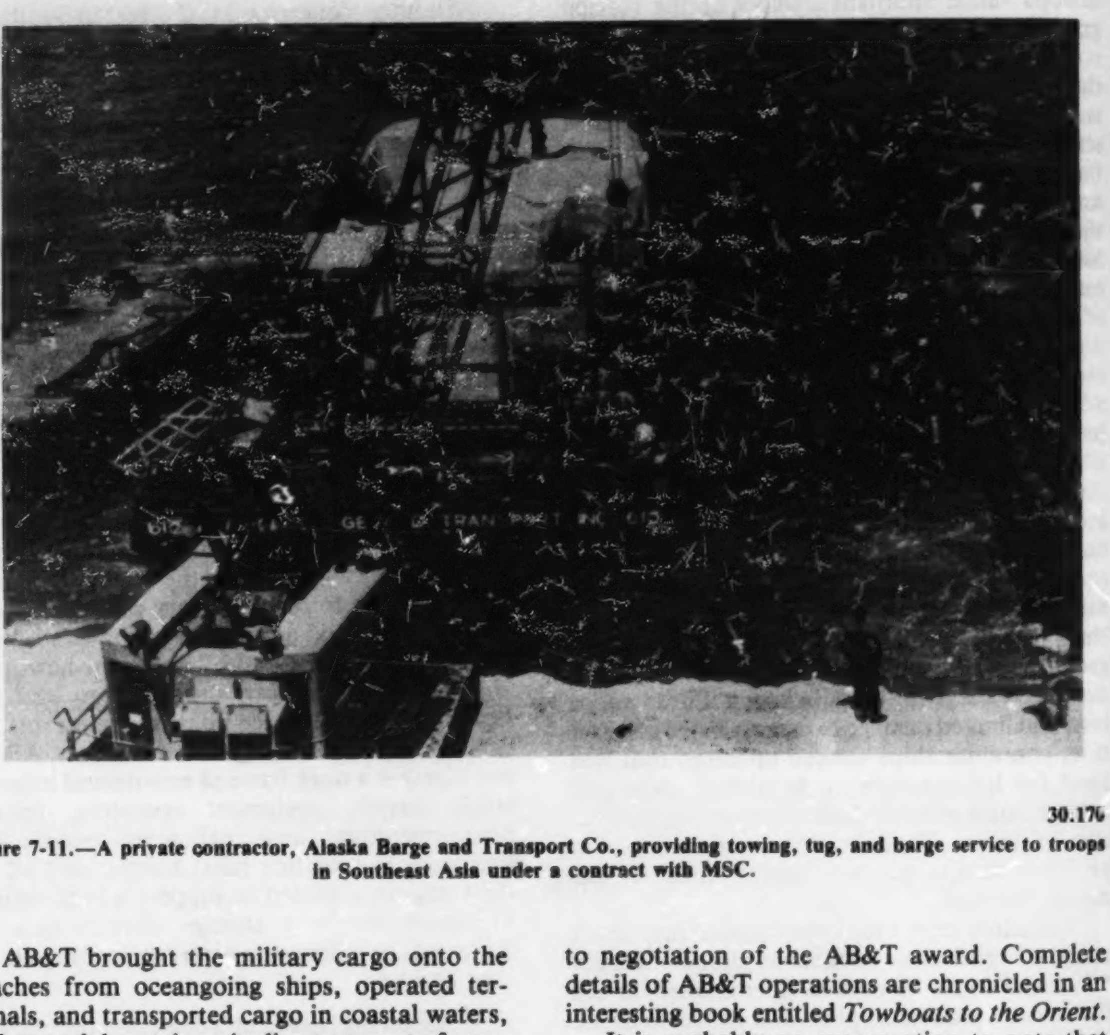

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Figure 7-11.—A private contractor, Alaska Barge and Transport Co., providing towing, tug, and barge service to troops in Southeast Asia under a contract with MSC.

AB&T brought the military cargo onto the beaches from oceangoing ships, operated terminals, and transported cargo in coastal waters, and up and down rivers in direct support of combat operations. They provided stevedoring, lighterage, trucking, repair, warehousing, and delivery services. They managed their own operations, hired South Vietnamese and Third Country nationals to supplement their stateside work force, and developed training programs that enabled many of the foreign nationals to move into management and skilled positions. They did a job neither the Army nor the Navy was equipped to do.

The contract MSC and AB&T eventually negotiated was a pioneering effort, a cost-plus-award-fee contract not previously used by MSC and seldom used for military procurement prior to negotiation of the AB&T award. Complete details of AB&T operations are chronicled in an interesting book entitled *Towboats to the Orient*.

It is probably no exaggeration to note that subsequent advancements in tug and barge operations and services now used routinely by MSC in several geographical areas had their origin in services provided to MSC in ice-laden Arctic waters and the equally dangerous waters of wartime South Vietnam.

In 1966, a major change in MSC relationships with the maritime industry occurred when the Department of Defense directed that competitive procurement be used by MSC in obtaining ships, services, and shipping rates from the carriers. Prior to that, MSC negotiated with associations representing the carriers, and with uniform rates being established for varied commodities on individual trade routes. Under the new Defense policy, carriers had to compete with one another for the carriage of military cargo.

Subsequently, the carriers were active in several efforts to replace competitive procurement with some form of cargo allocation—efforts that resulted in a study by the Maritime Administration named SPAR. It purported to show that the carriers were not recovering their cost of operations because competition forced them to offer unjustifiably low rates. A later study involved the Department of Defense, the Maritime Administration, the maritime industry, and the Office of Management and Budget. It was dubbed SPANS. But, after review of MSC rates by the Federal Maritime Commission over a period of several years, the dust settled. Competitively negotiated procurement now is the routine, and is accepted by industry.

MSC's 20th year—1969—was one of its most productive. Command ships delivered more than 30.6 million measurement tons of dry cargo. Earnings totaled $1.28 billion, the third consecutive year the command had hit the billion dollar mark. Use of containers for military shipments was growing with 3.9 million tons of cargo being delivered in containers by the command. During 1969, MSC installed a computer system to improve its management, developed plans for a multipurpose ship for military support operations, and continued support of U.S. forces in Southeast Asia.

In his 20th anniversary message, MSC Commander Vice Admiral Lawson P. Ramage summed up 20 years of MSC operations. "By doing our jobs in the past 20 years," he said, "we have served as architects of peace. By performing our daily tasks we have helped man reach the moon and we have benefited our fellowmen by our support of studies of the ocean's mysteries."

With two decades of MSC history already written, MSC was doing what comes naturally to a proven, service-oriented organization. In the 5 years it supported the war in Southeast Asia, MSC had set up a Special Express, a five-ship force that delivered building materials and supplies for the Air Force to overcome severe shortages and delays in the delivery, storage, transportation, and use of air munitions. MSC also began operating ships in a program known as Sea Express, a program designed to speed high priority cargo to Southeast Asia, faster than an equal volume could be delivered by air.

More than $150 million were saved for the Army between 1965 and 1970 by MSC's manning and operation of a ship which repaired Army helicopters (figure 7-12) and put them back in

30.171

Figure 7-12.—USNS Corpus Christi Bay was deployed to Southeast Asia during the war. It served as a helicopter repair facility.

service. The Army provided the technicians and MSC positioned the ship wherever it was needed, usually just a quick hop from the battlefields. MSC also delivered millions of tons of supplies, equipment, munitions, and fuel to Army combat forces.

Another big fuel customer for MSC was the Navy. MSC delivered fuel for fleet ships and for Navy tactical aircraft. Other Navy cargo, in addition to munitions, building supplies, and foodstuff, included river patrol boats too bulky for other than MSC heavy-lift ships.

As it had during earlier crises in Korea and Lebanon, MSC lifted most of the Marine Corps troops who took part in Southeast Asia operations, supplying their logistical needs as well.

MSC OPERATIONS, 1970 TO THE PRESENT

Many logistical and operational challenges were faced by MSC during the 1960s. Before U.S. involvement in the war that ended in January 1973, Southeast Asia support had become almost a routine—one fulfilled while simultaneously meeting demands for support of troops in other areas of the world. Near the end of the war, MSC supported Project Enhance, an accelerated buildup of supplies and equipment needed by South Vietnamese forces. More than 150,000 measurement tons were sealifted there in a few weeks.

Then came Roll-Up, essentially Enhance in reverse. Nearly 200,000 tons of equipment for U.S. and Korean troops had to be returned within a 60-day period following the cease-fire. By the time U.S. involvement there had ended, the Navy's sealift operating agency had lifted more than 90 million measurement tons of military dry cargo to Southeast Asia. It also delivered 20 million long tons of petroleum products. But, there was another chapter to follow.

It began as the North Vietnamese overwhelmed South Vietnamese forces in 1975. Refugees streamed southward ahead of advancing forces, just as they had fled North Vietnam when the forces of Communism took control in that area several years earlier.

And, just as MSC then lifted more than 300,000 refugees from North Vietnam to safety, they lifted nearly 180,000 South Vietnamese to freedom in 1975 (figure 7-13). To do the job, MSC diverted command-controlled cargo ships to South Vietnamese waters. Standing offshore, they picked up refugees who fled by small boats, helicopters, rafts, by anything that could float. Some were taken off the beaches by small boats, and in AB&T tugs and barges. In just a few days, nearly 180,000 had been lifted by MSC chartered dry cargo ships and by Government-owned cargo ships in the nucleus fleet. One ship, the chartered SS *Pioneer Contender*, carried more than 16,600 refugees to safety in a single voyage.

Stewards improvised, cooking rice from meager ship stores in sinks with the aid of steam hoses. They made tuna soup in 55-gallon garbage cans. For small crews, 35 to 45 in most ships, support of the refugees was an around-the-clock challenge. Some gave up their cabins so that they could be used as delivery rooms for new arrivals who could claim American citizenship by virtue of being born aboard a ship flying the U.S. flag.

In a sense, the 1970s was a decade in which MSC earned the description of a "born again" organization. It was a period in which the command began laying up World War II ships, updating its management procedures, taking on new missions, and emphasizing planning and development of contingency capability as the ultimate product of its peacetime transportation functions.

Thus, one can best look at the 1970s in terms of development of previously identified trends and the initiation of new concepts, policies, and programs.

Even before the cease-fire in Southeast Asia in 1973, MSC had begun returning ships withdrawn from the NDRF. Some, however, had no future potential and were sold for scrap by the Maritime Administration. Many of MSC's World War II ships, notably the Victories and Liberties, met the same fate. Three troopships had been used in Southeast Asia to transport Korean troops to and from the combat areas. All were disposed of and the era of the troopship ended in 1973.

Some scientific support ships were laid up during the 1970s, but other new ones were added. Typical of the MSC "new look" was the twin-hulled USNS *Hayes*, MSC's first catamaran. Two other new design ships were added, both oceanographic vessels. They were the USNS *Harkness* and a sister ship, the *Chauvenet*. Both were built in England specifically for oceanographic research.

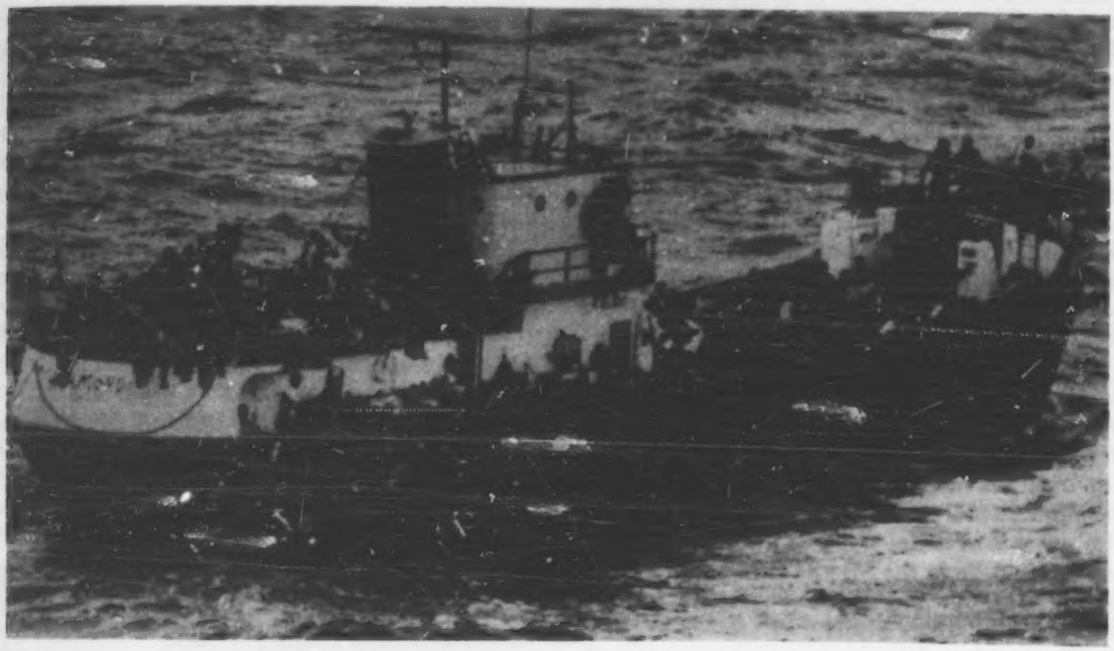

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Figure 7-13.—MSC ships, chartered and Government-owned, carried 180,000 South Vietnamese refugees to safety just before the fall of their country.

A tremendous change was the addition of a new command mission, fleet support. It began with the assignment of USNS *Taluga* in 1972. The fleet oiler was transferred to MSC for civilian manning as part of a series of initiatives to determine how civilian manpower could be used to help meet Navy needs while simultaneously cutting cost and freeing trained military manpower for duty aboard combatant ships.

In a little more than 3 years, *Taluga* made nearly 900 replenishments, and the concept of Civil Service manned oilers—assisted by a small Navy Department that handled communications and liaison—had been accepted throughout the fleet. *Taluga* saved the Navy from $1.5 to $2 million per year, and freed as many as 250 military personnel for assignment to combatants. The result was that by the end of the 1970s, MSC operated a Naval Fleet Auxiliary Force that included a dozen oilers, seven fleet ocean tugs—some of them new designs built with Navy appropriated funding—a fleet stores ship, three cargo ships that delivered missiles for the submarine force, three cable layers, and an ammunition ship.

Other types of ships are scheduled to be added to the MSC operated Naval Fleet Auxiliary Force (NFAF) in the 1980s. MSC may operate a third or more of all Navy auxiliary support ships before the decade of the 1980s is closed out. The program which began with the operational test of the oiler *Taluga* was known as Charger Log II. Charger Log V was a test of MSC operation of other types of Navy support ships.

Charger Log I was a similar test using an MSC chartered, privately owned and operated tanker for direct support of fleet and allied ships. It too was a success, though a more limited one since a great deal of MSC expertise was needed to equip the ship and familiarize the civilian crew with replenishment operations. Since merchant ship mariners signed on for a single voyage, from union hiring halls, it was apparent that there would be problems in maintaining crew familiarity with Navy underway replenishment techniques on a long-term basis. Nevertheless, Charger Log I demonstrated that crews of privately operated merchant ships have the basic skills and can handle underway replenishment if their ships are equipped and if they are given some training.

Charger Log III was designed to see if Navy personnel could man an oiler with the same small crews assigned MSC oilers. The test was canceled since it was readily apparent that Navy personnel could man the oiler if they were equally experienced. The problem was that to assign a Navy crew of seasoned seamen would require that all be mid-level or senior petty officers, the people the Navy most needed on combatant ships.

Charger Log IV tested MSC's ability to replenish fleet ships in the Indian Ocean on an opportune basis—when their tracks brought them near each other. Before the decade of the 1970s was out, this had become a routine operational technique. MSC tankers were assigned to support Navy task forces deployed to the Indian Ocean as the situation in the Middle East became more critical. Both nucleus fleet and chartered tankers were used, all successfully.

Charger Log VI was a similar program. It used MSC controlled fleet tankers for opportune replenishment of Navy fleet ships. It, however, was conducted on a worldwide basis. This type of operation also became routine for MSC during the decade of the 1970s.

Charger Log VII tested the capability of a privately owned and operated barge carrier to replenish fleet ships at sea while underway. Cargo was lifted from the commercial LASH to the fleet ship by helicopter and delivered alongside by barge while the ships were at anchor. Although reasonably successful, little has been done to advance technology or develop capability in this area since the initial test in the early 1970s.

Deployment of Navy task forces to the Indian Ocean in the late 1970s, problems of recruiting and retaining manpower, and the need to use appropriated money for modernization of the combatant Navy fleet proved the wisdom of the Charger Log series of tests and the operating programs that resulted. MSC involvement in direct support of the Navy fleet can only be expected to expand.

Among major efforts by MSC to modernize its controlled fleet in the 1970s were acquisition of new tankers by build and charter procurement, and a move to diesel propulsion systems. A whole new class of tankers, Sealift ships, were built by private investors who raised needed capital and arranged for their construction on the strength of an MSC commitment to charter the 25,000 dwt tankers when operational. All nine were delivered by the mid-1970s. By the end of the decade, MSC had acquired a total of 28 ships, all but one were tankers, by some form of build and charter procurement that required no command investment of capital until the ships were under MSC control and ready for operation. The one exception was a roll-on/roll-off ship, the *Admiral William Callaghan*.

MSC, in close cooperation with the U.S. Army, pioneered development of the roll-on/roll-off ship (figure 7-14). USNS *Comet* was built in the 1960s, and the USNS *Sea Lift* in the 1970s. As MSC entered the decade of the 1980s, the command controlled a total of five roll-on/roll-off

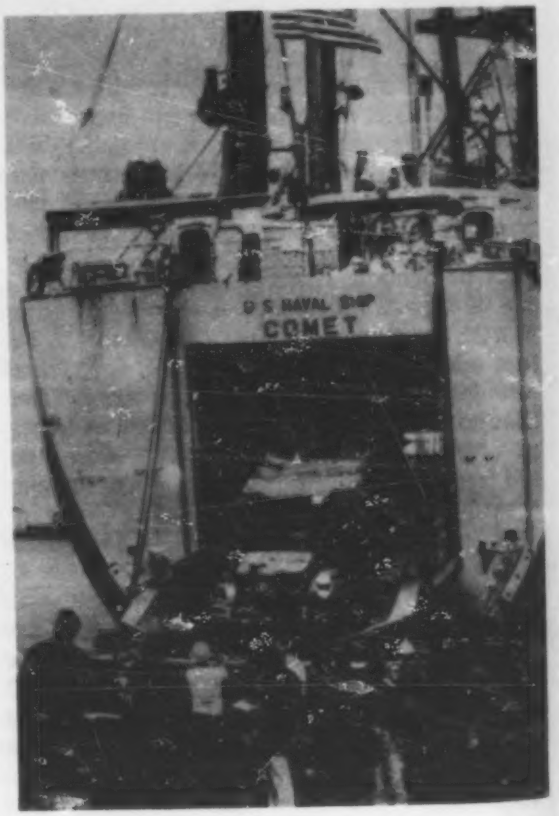

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Figure 7-14.—An MSC pioneered development of the roll-on/roll-off ships.

(RO/RO) ships. Two were Government-owned, two chartered for support of the Near-Term Prepositioned Force in the Indian Ocean, and the fifth was the *Callaghan*. Two additional RO/ROs were to be chartered in early 1981; a significant addition to the MSC contingency sealift capability.

Just as MSC led the U.S. maritime industry in development and use of coatings for tankers, and in development and use of roll-on/roll-off ships, the command was in the forefront in the use of marine diesel engines.

All of the Sealift class tankers are fitted with medium speed diesels, as are four Columbia class tankers also acquired by build and charter. In the late 1970s work began to equip USNS *Myer* with medium speed diesel engines and USNS *Neptune* also was scheduled to "go diesel." Both are cable laying and repair ships.

In addition, diesel engines power the seven new ocean tugs assigned to the command and will be used in up to 12 ocean surveillance ships that MSC is scheduled to operate in the 1980s. A high-speed diesel plant will be installed in a new cable layer MSC is scheduled to receive as part of the Navy shipbuilding program. Up to 20 oilers of the TAO 187 class also will be diesel powered. Navy was quick to take advantage of MSC's experience with diesel-driven ships, especially so for ships assigned to the command.

U.S. industry was as reluctant to switch to the more economical diesels as it was to steam-driven ships, although tugs and other small ships have been using diesels for some time. As a result, MSC was forced to launch its own training program to ensure that diesel engineers were available. However, industry began to follow the MSC and European examples in the early 1980s, and diesels are used in more and more American built ships. Energy shortages, of course, gave great impetus to the switch. Diesels burn less fuel than other types of engines.

Another area in which MSC pioneered is the use of tug and barge delivery systems (figure 7-15).

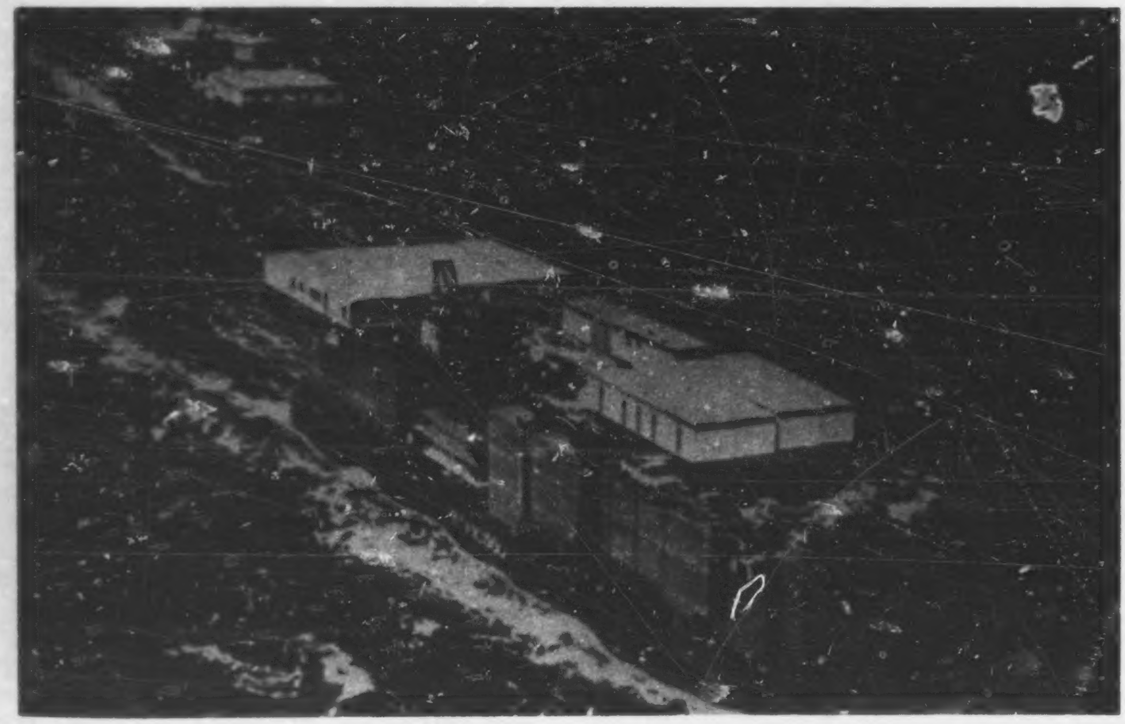

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Figure 7-15.—Another MSC pioneered development—the tug and barge delivery system.

Building on its successful experiences in Alaska and Southeast Asia, MSC procured dedicated tug and barge delivery services for support of the military base at Adak and a wide range of activities in other parts of Alaska under the Cool Barge Program (figure 7-16). Chartered tugs and barges support downrange stations of NASA and the Air Force in the Carribbean and have been used in the Pacific as well. It is probably a fair statement to claim that much of the progress of the growing U.S. tug and barge industry has been a result of early MSC reliance on tug and barge operators in Alaska and in Southeast Asia. If nothing else, MSC's confidence in the operators' capabilities and MSC revenue helped stimulate the rapid growth of a new segment of the maritime industry.

Inflation, particularly that caused by upward spiraling fuel costs, had a significant impact of MSC operations in the 1970s.

The switch to diesels was only part of the evidence of MSC concern with rising costs and effective service. Another manifestation was emphasis placed on operational analysis. Computers introduced into the command management system in the late 1960s, were used in the early 1970s to analyze previous ship voyages, to better project costs of moving varied types of cargo, and to allocate ships or book cargo on commercial carriers. Analysis of past experiences allowed MSC to sail controlled fleet ships at optimum speeds to reduce fuel costs while meeting delivery deadlines.

There was also a definite trend in the 1970s toward a mix of scheduled and tramp ship operations—unlike the 1950s and 1960s when MSC provided essentially tramp service to its customers.

On the west coast, MSC, Pacific began operating the Mid-Pacific Service, a scheduled

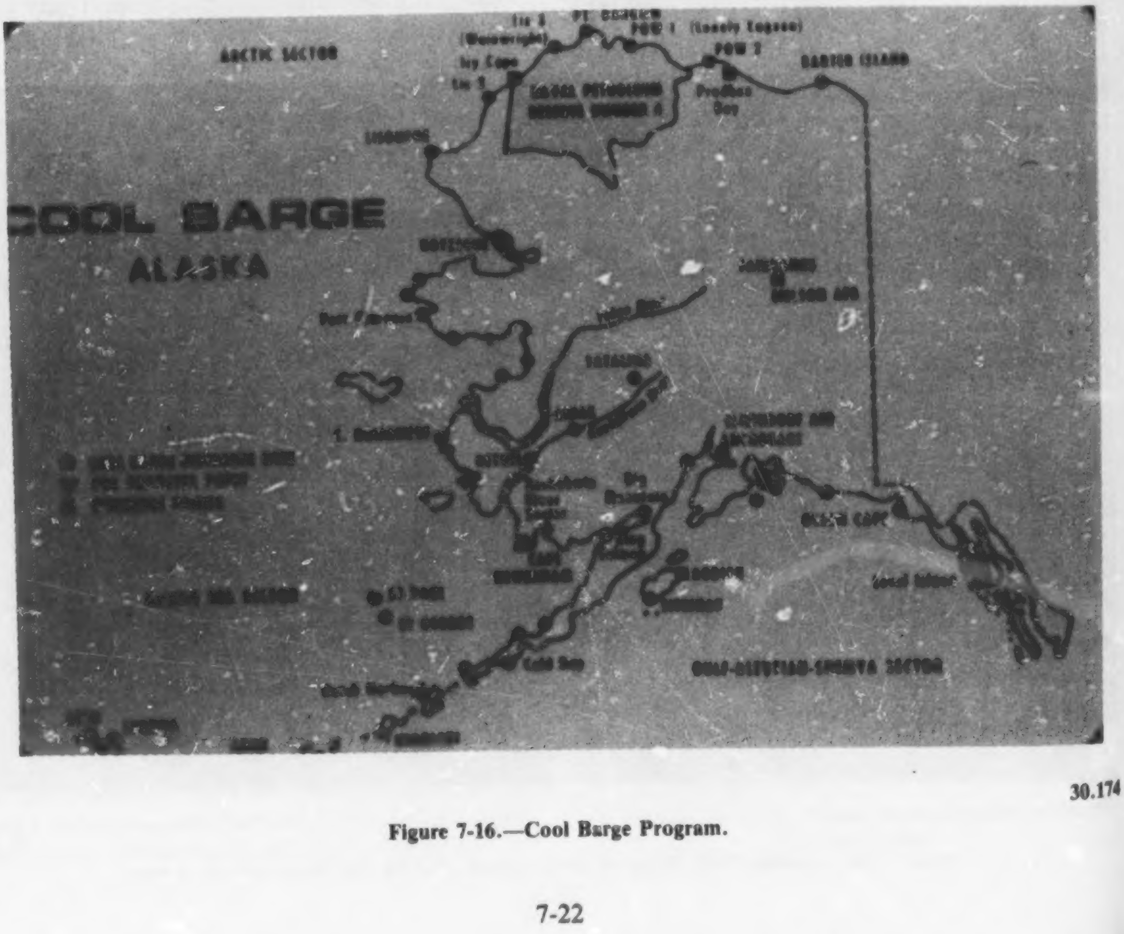

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Figure 7-16.—Cool Barge Program.

liner-type service between the west coast and the Far East. At the same time, MSC, Atlantic operated ships on schedule between the east, gulf, and west coasts. The name of that program was the Tri-Coast Service. These programs were later combined with MSC Pacific serving as the command single manager for a program known as Combined Service Manning. MSC, Pacific and MSC, Atlantic provide ships that sail on schedule and serve the east coast, gulf coast, west coast, Far East, and in-between ports. Advantages of the liner-type service for military support are that it reduces the number of ships needed, provides scheduled reliable service to military customers, and reduces overall cost of operations.

Scheduled service is provided in other areas as the need arises. In the long run, the mix of tramp ship operations and liner-type scheduled service is beneficial to both MSC and the customers it serves. This is evidenced by the demands for either continuation or expansion. A particular plus for the logistical manager is that regular service allows the manager to reduce stocks of supplies and equipment at overseas bases, knowing that replacements will be delivered on a regular schedule.

Among the pressures on MSC in the 1970s—a decade in which ingenuity of management often was challenged—was one that resulted from a decline in the size of the maritime work force. The command launched as intensive recruiting effort in the latter part of the decade. Particularly needed were diesel and steam engineers (figure 7-17), people with Navy fleet support experience, and those skilled in various trades.

The recruiting effort was supplemented by a stepped-up training program (figure 7-18) that enabled employees to upgrade their licenses, or for the young and ambitious to seek initial licenses. MSC paid the tuition cost for those accepted. The result was a significant upgrading of the command maritime work force. MSC also set up special programs to turn out the diesel engineers who were so sorely needed.

To help provide a better picture of what the future would bring, MSC and the Maritime Administration conducted a joint study of civilian seafaring manpower requirements—in peace and war—for the period from 1978 through 1984. One conclusion was that skilled manpower might well be the Achilles heel of efforts to strengthen sealift readiness in any emergency where manpower requirements are great.

The MSC worldwide organization was considerably streamlined after the end of the war in Southeast Asia. So was the reserve structure. Emphasis in each instance was on assuring that command reserve units were staffed and located to provide the most immediate response possible in event of a contingency. MSC contingency planning was given new emphasis with the Joint Chiefs of Staff assuming some of the funding responsibility. MSC also recommended that its planning function be joint-service manner. Army, Air Force, Marine Corps, and Navy planners now are a part of that staff. Their broad experience and customer-oriented knowledge help ensure that transportation plans MSC now develops for support of service general war, and contingency or emergency plans are both more comprehensive and valid.

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Figure 7-17.—In the 1970s MSC began an intensive recruiting effort for diesel and steam engineers.

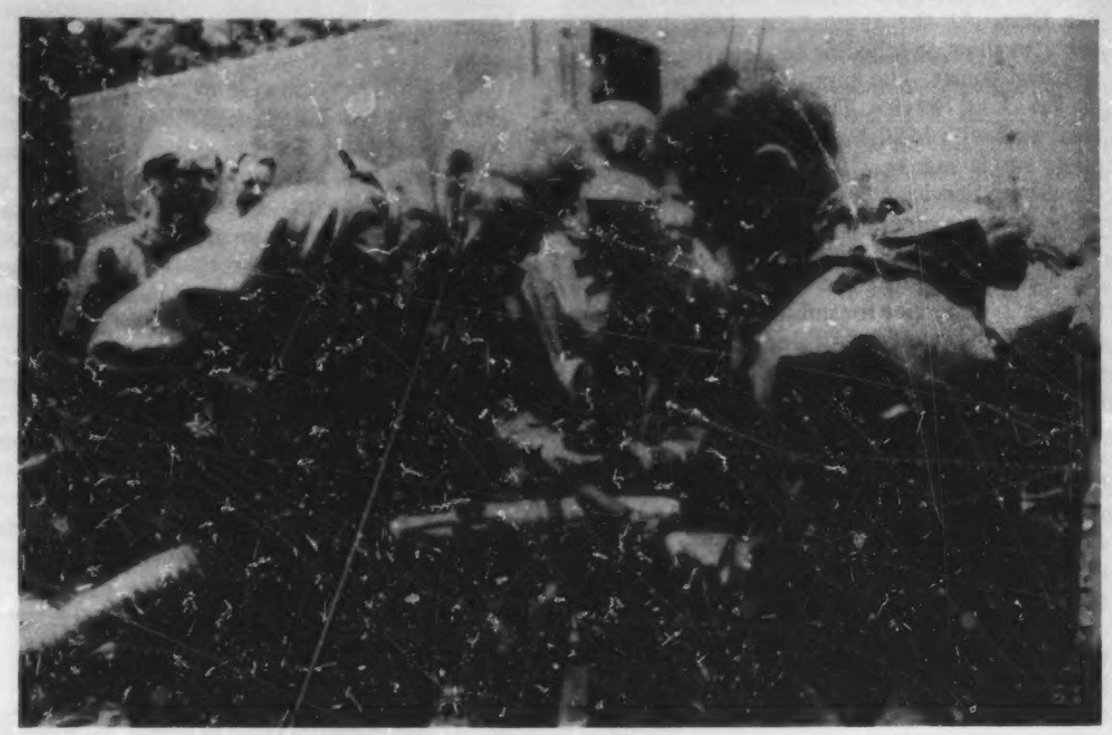

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Figure 7-18.—Training is a valuable benefit which is provided to MSC civilian mariners.

Emphasis on contingency planning which resulted in joint service manning and greater funding was a result of policy changes at a higher level. Broadening previous policy of planning primarily for a NATO war, the Department of Defense and JCS began stressing the need for flexibility of response to emergency demands for global mobility. In the 1950s and 1960s, no one had anticipated such a myriad of events as the break between the Soviet Union and China, the tremendous increases in oil prices and the impact they had on economies of many nations, the develoment of intercontinental missiles capable of carrying multiple nuclear warheads.

A result of increased emphasis of flexibility was the greater concern for sealift and its capability to respond. That concern was becoming evident in the late 1970s in the Congress, within the Joint Chiefs of Staff, the Department of Defense, the Navy and in MSC itself.

The command recommended that appropriated Navy funds be used to maintain some ships in readiness even when there is no immediate cargo requirement. It was approved. The result is that MSC can maintain a controlled fleet sized to meet peacetime sealift needs and ready to respond to initial surge requirements in an emergency. While readiness funding was provided only for dry cargo ships, MSC has considered a similar program to maintain tanker readiness.

Historically, the MSC controlled tanker fleet (figure 7-19) had been configured to provide 85 percent of the annual lift capability. The other 15 percent was obtained by spot charter of privately owned tankers. But in the late 1970s and early 1980s, the command was forced to rely on foreign flag tankers to meet 50 percent or more of the requirements that could not be fulfilled by controlled fleet ships. Thus, the size of the tanker fleet and the availability of the small U.S. flag

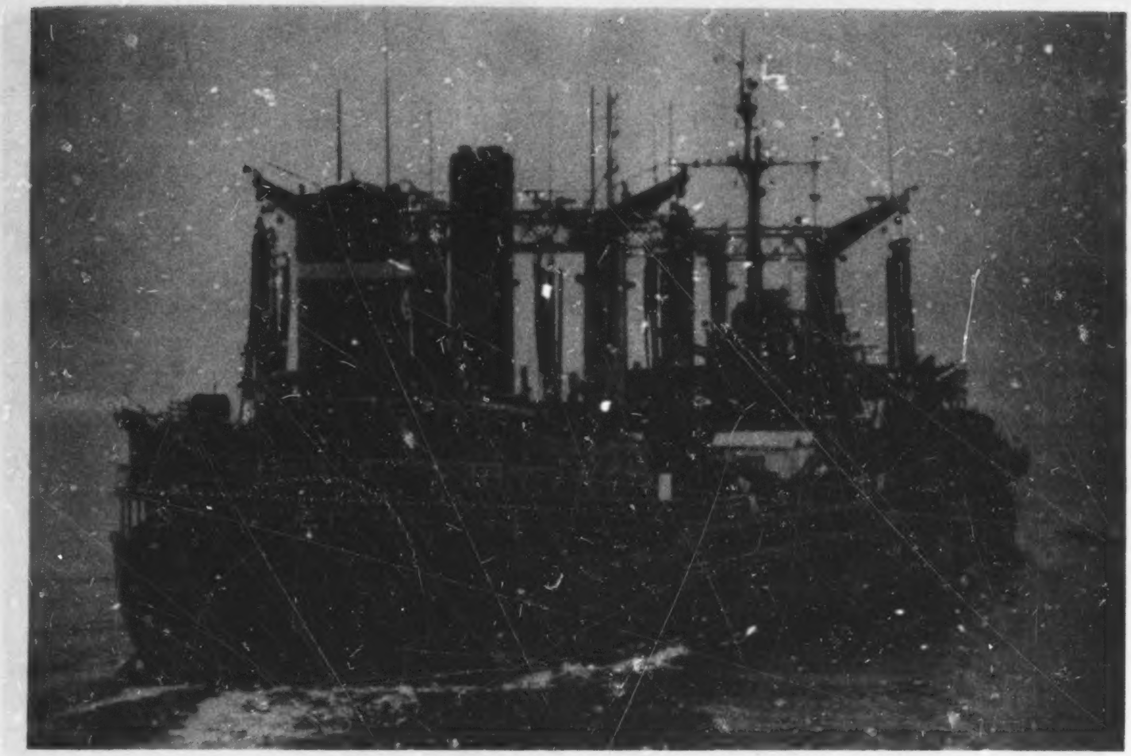

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Figure 7-19.—A POL oiler—part of the MSC tanker fleet.

tankers MSC needed for augmentation were among the contingency problems the command was concentrating on as the decade of the 1980s began.

MSC tanker and procurement people also were active in a non-Defense program, the Strategic Petroleum Reserve. Managed by the Department of Energy, the program calls for storage of millions of barrels of crude oil in salt domes scattered along the gulf coast. When needed in a national emergency, the oil can be pumped out and moved to refineries by pipeline and ship.

MSC began chartering ships for delivery of the crude oil purchased by Defense Fuels Supply Center in the late 1970s. Both Defense organizations provided their expertise as the result of a memorandum of agreement between the secretaries of the two cabinet-level organizations. Among the ships MSC chartered were very large crude carriers and smaller tankers (figure 7-20) that served as shuttle ships since no U.S. ports can handle tankers of more than 100,000 deadweight tons.

Most important of all the trends within MSC during the 1970s were the efforts to increase sealift readiness capability. Layup of older ships and acquisition of newer ones from the Maritime Administration were initial steps. Long-term charter of breakbulk and additional roll-on/roll-off capability was another. Readiness funding enabled the command to operate a stabilized force of ships that could be committed in an emergency.

Great attention was given to the development of sealift augmentation programs. First was a concerted attempt with the Maritime Administration to upgrade the quality of the National Defense Reserve Fleet by adding merchant ships laid up

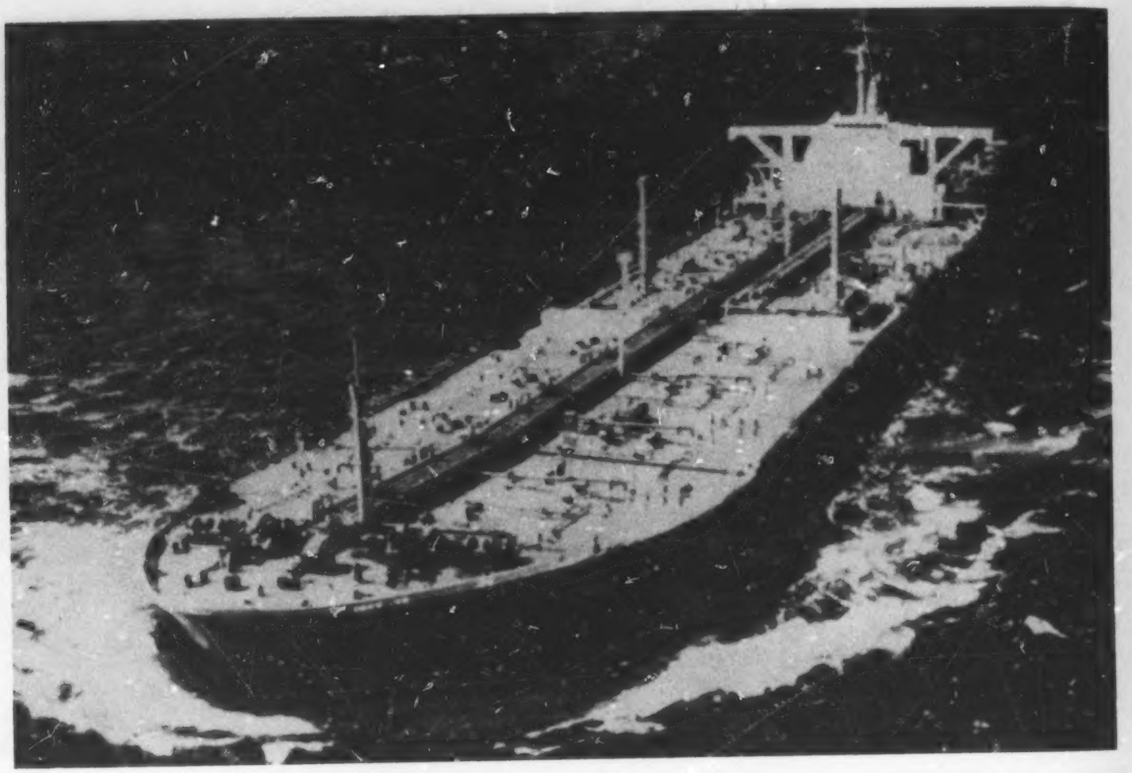

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Figure 7-20.—An MSC chartered POL tanker.

by industry, ships more modern than World War II ships already in the NDRF. Thus, a segment of the NDRF known as the Ready Reserve Force was created (figure 7-21). It consists of ships maintained in a sufficient state of readiness to be activated within 5 to 10 days. Navy pays the cost and the Maritime Administration maintains the ship. MSC checks their capability by using them in exercises.

Since 1976, MSC has been active in the annual deployment of forces to Europe for NATO maneuvers, a joint exercise known as Reforger (Reinforcement of Forces in Germany). Troops are airlifted and their equipment is sealifted. Other exercises are held to determine how to best discharge intermodal ships—particularly container ships—when port facilities are lacking or insufficient. Use of barges for amphibious support (figure 7-22), use of commercial ships for underway replenishment, use of commercial ships for fleet support (figure 7-23), use of roll-on/roll-off ships in austere environments, readiness of the Ready Reserve Force, all of these were tested in the 1970s. In command post exercises (CPX), reserve capability was evaluated and developed as was the ability of the merchant marine to respond to emergency demands. Actions required to requisition ships in a national emergency were tested in simulated exercises. Transportation support plans also were evaluated in simulated exercises.

Sealift readiness is covered in the final chapter of this manual. Many of the programs have been in effect for some time. Others were refined or developed in the 1970s with MSC playing a lead if not a primary role. The Department of Defense Sealift Readiness Program is one example. It provides a means for carriers participating in

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Figure 7-21.—National Defense Reserve Fleet (NDRF). Known as the Ready Reserve Fleet.

movement of military cargo in response to MSC requests for proposals, and those receiving subsidy for ship construction or operation, to commit ships for MSC callup in an emergency short of mobilization. Though never tested, the program provides augmentation for crises that cannot be met by the use of chartered, Ready Reserve Force, and NDRF ships in the period before requisitioning can be initiated, or when requisitioning is not warranted.

As the decade of the 1980s began, awareness had been sharpened in Congress, in the Joint Chiefs of Staff, and within the Department of Defense concerning the role of sealift. Questions being asked focused on whether airlift and sealift mobility forces were adequate. The general consensus was that both needed strengthening, sealift in particular. That led to new and major efforts to increase sealift capability by acquisition of fast SL-7 container ships no longer needed by industry. It led to establishment of the Rapid Deployment Force and a group of ships known as the Near Term Prepositioned Force (NTPF). In early 1980, NTPF ships, carrying equipment to support combat operations of up to 15,000 troops and several Air Force wings, were deployed in the Indian Ocean.

At the same time, design efforts were initiated to produce a ship specifically configured for prepositioning combat support equipment at sea (figure 7-24), for locating such equipment wherever political or diplomatic circumstances might require. These subjects also are covered in subsequent chapters on sealift readiness and current operations. They can be best understood when evaluated against the requirement MSC fulfilled during the preceding three decades. Lessons learned in those years still are being translated into programs so that MSC can provide global mobility and logistical support for the Armed Forces of the United States.

SUMMARY

Founded in August 1949 and operational in October of the same year, MSC assumed control of ships and people transferred from the Naval Transportation Service and Army Transport Service. Almost immediately, the fledgling command began operations in support of the Berlin Airlift and United Nations forces committed to the war in Korea. In subsequent years, MSC supported forces involved in crises in Lebanon, the Congo, the Suez Canal area, and Southeast Asia, to name only a few.

The command operated troopships, dry cargo carriers, tankers, a variety of small craft, roll-on/roll-off ships, even container ships for a short period of time. In addition to providing immediate response sealift, MSC developed a relationship with the U.S. maritime industry that is relied on for sealift augmentation in both peacetime and wartime. Over the years, MSC has shaped its organization to meet military requirements. Scientific and fleet support missions were added. Development of contingency

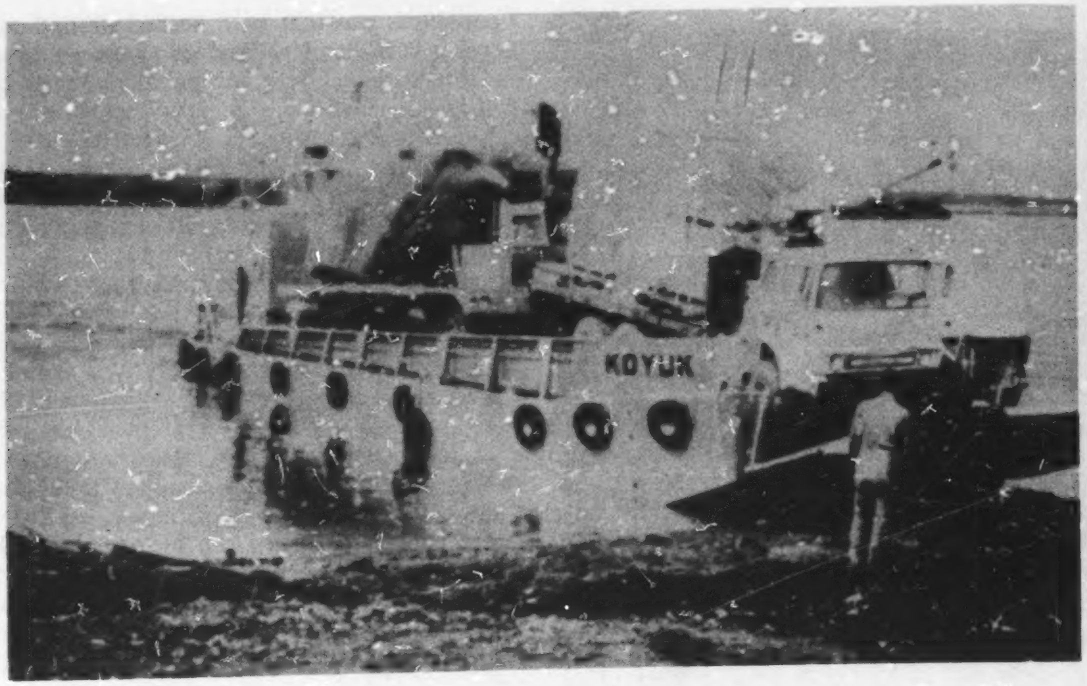

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Figure 7-22.—MSC provided amphibious support to various exercises.

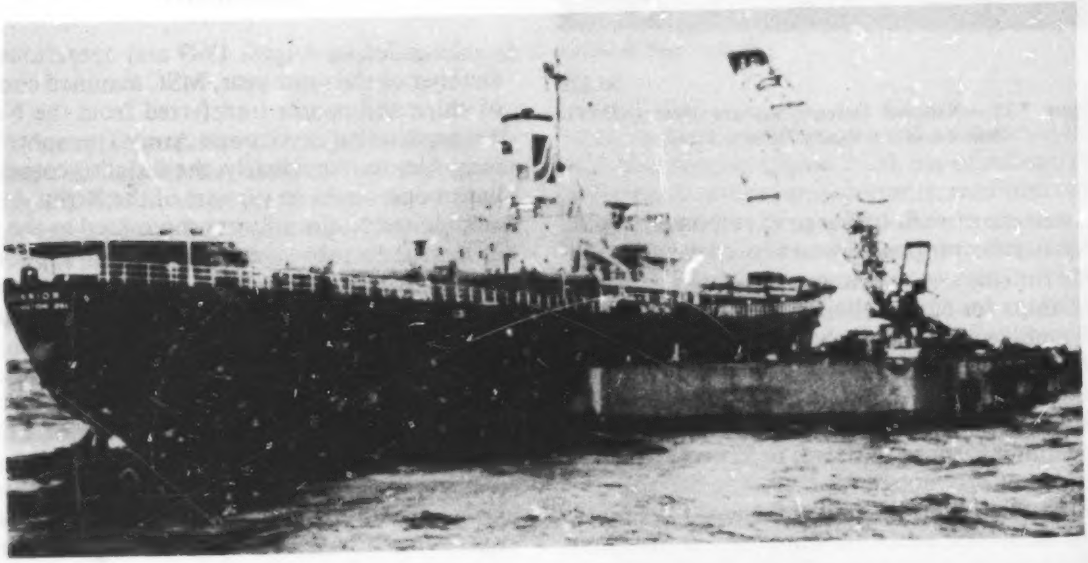

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Figure 7-23.—An MSC chartered commercial ship.

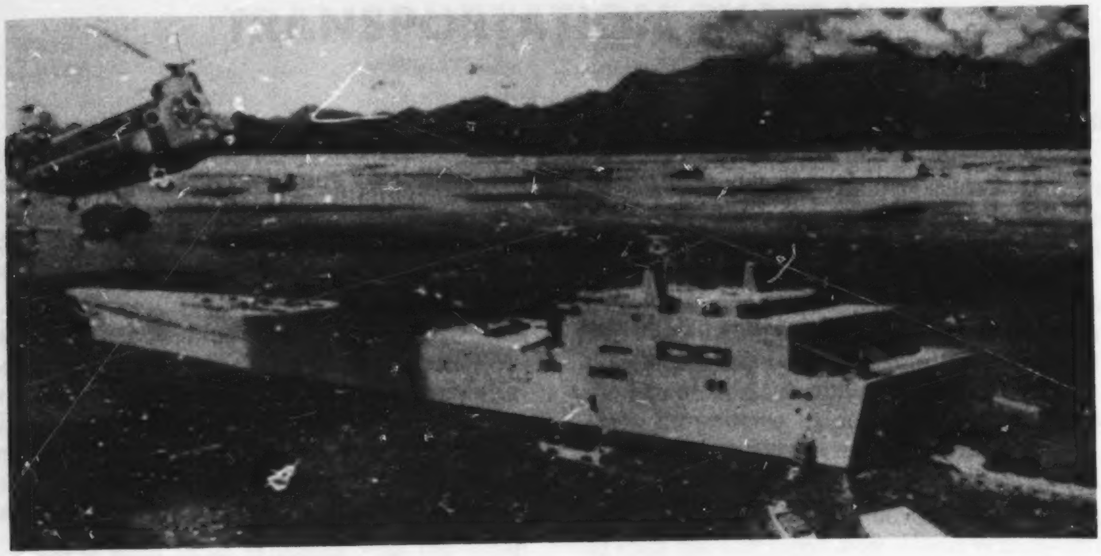

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Figure 7-24.—New ships are being designed by MSC.

capability has been given added emphasis with a resultant stepping-up of MSC planning support for general war, contingency, and emergency plans.

As history illustrates, MSC has never been and never will be an organization charged with fulfilling fixed requirements. The very nature of its missions requires that MSC be able to respond to a wide range of emergency requirements. Its ultimate role is development of the plans, the capability, the systems, and the relationships with industry and the military services needed to meet emergency requirements. It does so by peacetime execution of both sealift and nontransportation missions. What the future may bring for the command can be projected to some extent from history. More important are economic and military security objectives of the nation MSC serves.

CHAPTER 8

MSC AS AN ELEMENT OF THE DEFENSE TRANSPORTATION SYSTEM

There is no need for a Defense Transportation System other than for the delivery of troops and cargo. Both transportation operations and transportation management begin only when logistical or troop mobility requirements have been established.

That process was covered in chapter 2 of this manual. Keep in mind that sealift requirements assigned to MSC are generated by national objectives and U.S. policies, not by the transportation system itself. Military transportation is a means to an end—assuring troop deployment, supply, and reinforcement so that combat forces can carry out their national security missions.

This chapter deals primarily with the ocean segment of the Defense Transportation System, with the offering and booking of military ocean cargo, and with the various terms and procedures that are part of Department of Defense transportation. The following chapter focuses on sealift operations—on services provided by MSC Controlled Fleet ships and by private carriers through contracts with the command. Chapter 8 and 9 are intended to develop a better understanding of MSC sealift operations and the working relationships that exist among MSC, the services, theater commanders and other military customers, Federal agencies involved in maritime matters, and the private companies. All are participants in the Defense Transportation System (DTS).

Descriptions and illustrations in this chapter primarily concern peacetime sealift operations. In peacetime, key considerations are the reliability of the Defense Transportation System and the ultimate cost to the shipper. Emphasis is given system efficiency, effectiveness, and productivity. It is recognized, however, that the ultimate purpose of a peacetime system is to provide the capability needed for immediate expansion in a major contingency or general war.

Wartime changes would be made in procedure and policy. Their primary thrust would be toward making the system more responsive and productive. While cost, for example, would never be ignored, it would be less influential in wartime decision making than in peacetime. Cargo documentation would be simplified, but never to the extent that the military would be unable to track movements of supplies, equipment, and material to deployed military forces.

Since World War II, significant changes have taken place in the maritime industry. New types of ships have replaced most World War II-vintage breakbulk vessels—those that load cargo in bulk or on pallets through hatches for storage in ship holds. Typical container ships are the *Seabee* (figure 8-1) and *LASH* (figure 8-2). Both are barge carriers. Roll-on/roll-off (RO/RO) ships also were put into service (figure 8-3). Other specialized ships now in operation include LNGs (liquefied natural gas carriers) and VLCCs (very large crude oil carriers). Ships have become so specialized that many have little significance for military shippers although they are essential for carriage of U.S. domestic and international trade.

With changes in types of ships, methods of operation, and world trade patterns have come high labor costs, shortages of skilled mariners in some skill areas, and emphasis on low ship turnaround time. Emphasis has also been placed on limiting cargo damage and pilferage and on improving in-transit visibility of cargo. All these trends relate to the growth of intermodalism, a concept embraced enthusiastically by military shippers. From 75 to 80 percent of military dry cargo that moves over the oceans is considered

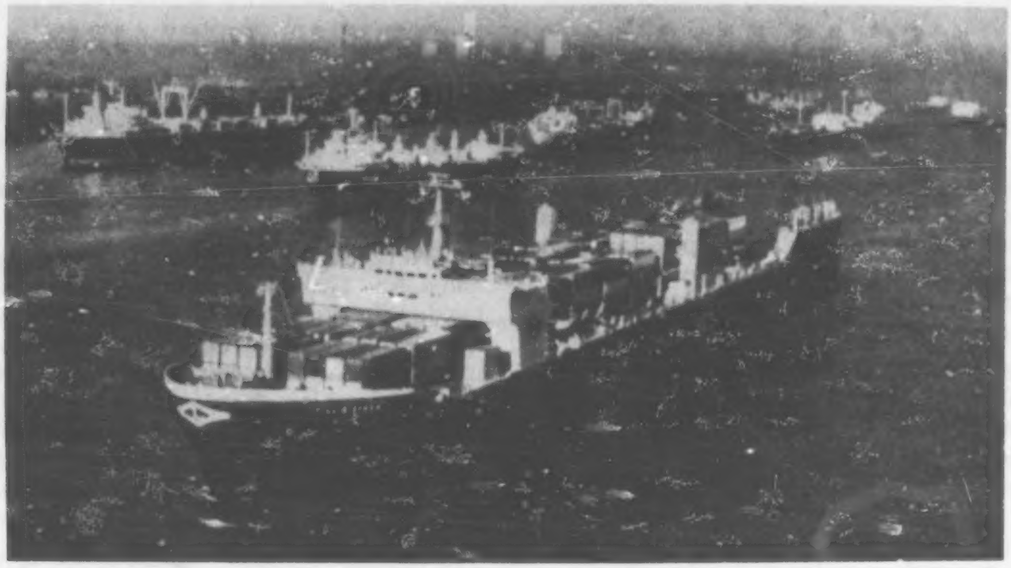

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Figure 8-1.—Seabee at sea.

containerizable (figure 8-4). Most of that cargo moves in containers.

With varied types of ships involved in ocean transportation, and with the growth of intermodalism, more is involved in sealift than simply placing ships in port, loading them, and sailing them to their destinations. Getting the cargo to the right port at the right time requires extensive planning and coordination. Making certain that ships are available when and where

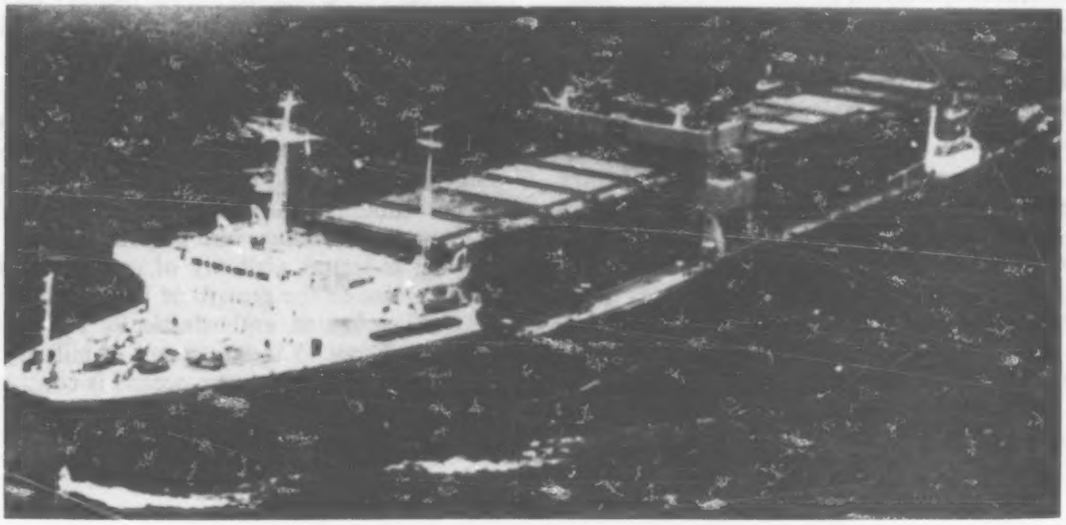

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Figure 8-2.—LASH at sea.

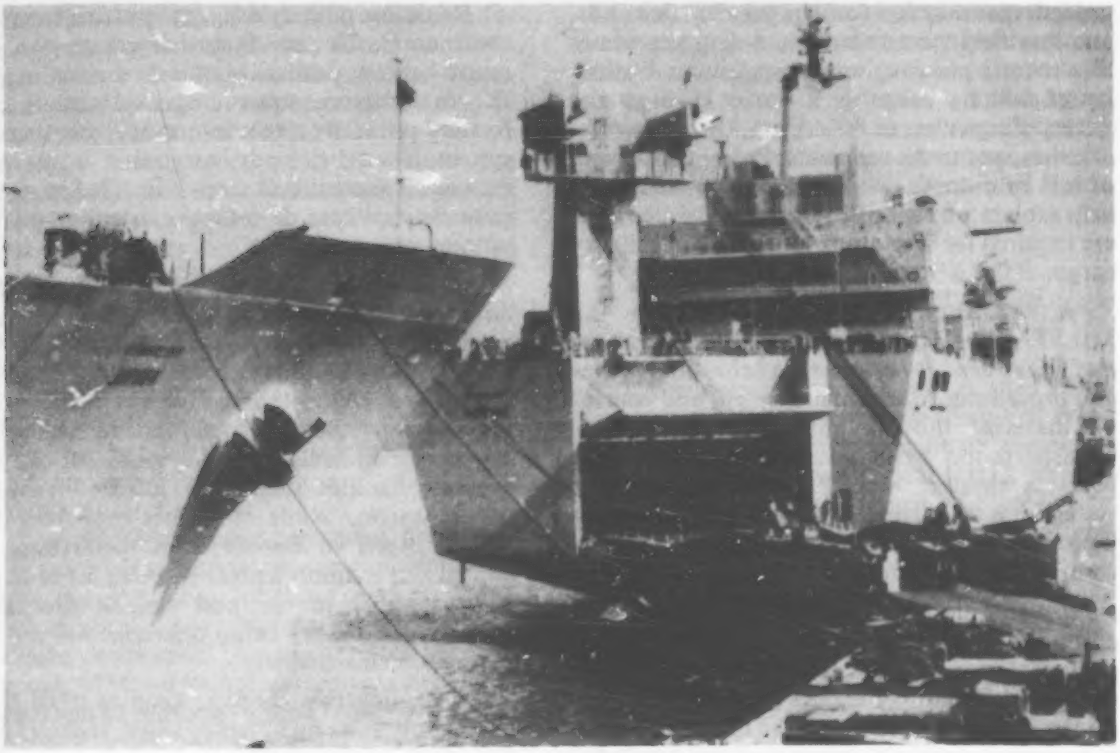

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Figure 8-3.—A view of an angled stern ramp found on some RO/RO ships.

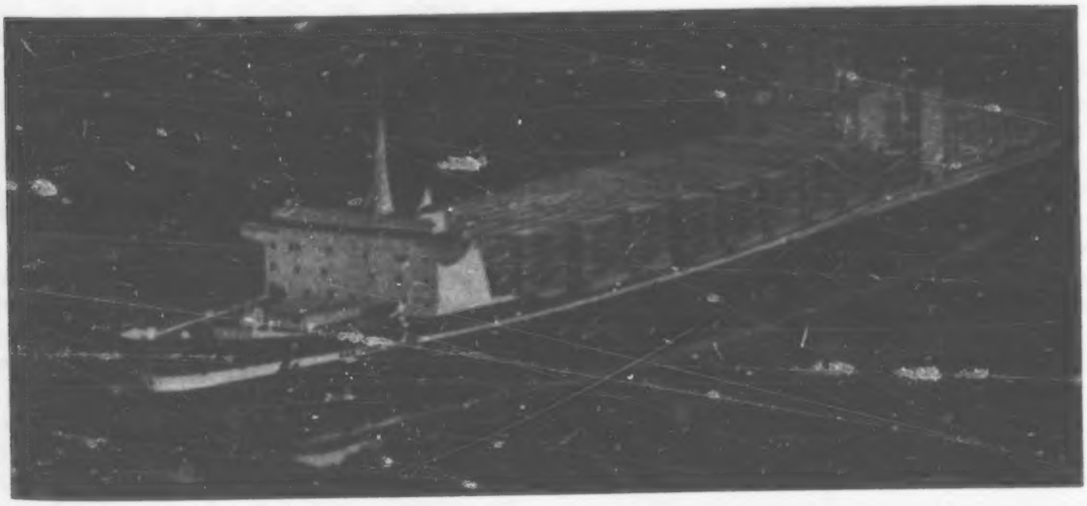

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Figure 8-4.—The backbone of the Defense Transportation System (DIS) is the container ship. Approximately 75% of all military cargo is containerized.

needed, that they can fulfill movement demands, and that they meet loading and discharge dates also require planning and management. Visibility of military cargo as it moves through the system is important to the shipper, to theater commanders, and to the recipients. Prompt settlement of loss or damage claims is also important. All help explain why specific policies and procedures are required for worldwide movement of military cargo.

A military publication known as MILSTAMP—*Military Standard Transportation and Movement Procedures*—establishes policies and procedures for the management and control of material moving through the Defense Transportation System—either to or from an overseas theater. MILSTAMP is a universal system that complements systems established by theater commanders for in-country management, control, and movement of military cargo.

In effect, the MILSTAMP manual establishes authority and assigns responsibilities for the documentation of military cargo movements. It contains designators or codes that identify cargo categories, air and sea ports, the differing modes of transport, required pickup and delivery dates for cargo, and so forth. MILSTAMP assures that everyone involved in moving cargo through the Defense Transportation System is using a common language and is working to achieve mutual goals in a standardized manner.

There are, of course, other instructions, directives, and regulations that apply to Defense transportation. An excellent description of the overall system is contained in a joint pamphlet published by Military Sealift Command and Military Traffic Management Command. MSC Pamphlet P-4600 or MTMC Pamphlet 55-13 describes the Department of Defense container delivery system.

MSC's ROLE IN THE DEFENSE TRANSPORTATION SYSTEM

To understand the ocean segment of the Defense Transportation System, you should have a knowledge of the overall system, know who the "players" are, and be somewhat familiar with their roles.

Peacetime military dry cargo moving from the continental United States overseas—or its return—moves primarily in the intermodal mode. For that reason, subsequent explanations are focused primarily on the intermodal distribution system. Nevertheless, dry cargo that moves over the oceans in breakbulk ships is handled much the same way. Where deviations exist, they will be pointed out.

MSC is responsible for lift of both dry and liquid cargo. Liquid cargo is primarily fuel needed by Army, Navy, Marine Corps, and Air Force units. Liquid cargo delivery differs from dry cargo movements and will be explained later in this chapter. Bulk cargo movements such as lift of strategic minerals, crude oil, grains, or coal are generally handled outside the Defense Transportation System. While MSC lifts coal from the United States to Europe, that requirement is limited and is simply a point-to-point lift of cargo from supplier to the port nearest the user. Therefore, bulk dry cargo deliveries will not be covered in this chapter.

In reading this chapter, keep in mind that MSC controls its own fleet of ships. Included are breakbulk ships, roll-on/roll-off vessels, and tankers—but no container ships or barge carriers. Some of the ships in the MSC Controlled Fleet are bareboat-chartered; some are Government-owned. Others are chartered for periods of time, as needed. No matter how they are made available, all ships in the MSC Controlled Fleet are loaded, sailed, diverted, and discharged under MSC direction. MSC operates a military fleet with a military mission. It also is the largest single operator of merchant-type ships in the United States. Those ships are used by MSC to provide both scheduled and tramp service for the military services.

MSC does not compete with commercial carriers. The primary purpose of the MSC Controlled Fleet is to provide the rapid response sealift capability needed to support U.S. forces in any emergency, contingency, or general war. In peacetime, controlled fleet ships carry hazardous cargo, full shipload lots, or cargo destined for areas not served by scheduled commercial liners. Use of the controlled fleet for unique military requirements, and when commercial service is not readily available, assures that a small organic fleet of merchant-type ships is readily available for emergency support of military forces.

Privately owned ships would be needed to augment MSC's rapid response force in an emergency—a major reason why private shipping is heavily relied on by the Department of Defense in peacetime. More than 95 percent of military dry cargo moves in privately owned ships. MSC relies on scheduled liners, often referred to as berth line ships, for delivery of military dry cargo when and where service is available. The command also obtains rates from the carriers for world routes and publishes them for use by military shippers. Rates for breakbulk service are published in MSC shipping agreements. Intermodal rates are published in MSC container agreements. Both are amended at midyear as rates change.

Each MSC container agreement provides a wide range of intermodal services and establishes terms and conditions for those services. Movement of cargo is covered from loading point to ultimate destination. Among services available through MSC container agreements are inland movement of the cargo to and from ports of embarkation or destination, stuffing and unstuffing boxes in port or at loading or delivery sites, control of atmospheric conditions (for perishable items), and stopoff service. The latter includes stuffing and unstuffing of containers routed to or from two or more consignees or consignors. That allows effective use of the container while simultaneously assuring required service. Refrigerated containers are maintained under terms in MSC container agreements. Provisions also are made for the military to use its own tractors in hauling containers overland, either for training or operational reasons. Agreements also cover leasing of traction equipment, containers or other equipment, and procurement of additional service if needed.

Most military dry cargo moving in the Defense Transportation System is lifted under provisions of MSC container agreements with ocean carriers. It provides through service from supply point to destination at preestablished rates. While service provided is worldwide, the command also negotiates special agreements with carriers for dedicated support of its customers with special needs or where liner service is lacking. Service can be a simple arrangement for port-to-port movement of cargo or a complete delivery system that encompasses several modes of transport. A more detailed explanation will be offered later, but a primary point to remember is that the range of services MSC can offer to military shippers is great. Such services combine all options available from industry and the MSC Controlled Fleet.

OTHER ELEMENTS OF THE DEFENSE TRANSPORTATION SYSTEM

The principals who are a part of the Defense Transportation System can be identified rather easily. Category headings include the shippers or shipper services, traffic managers, terminal operators, and the consignees who receive the cargo. MSC itself is difficult to fit into any single category since the command performs varied functions.

MSC is simultaneously a ship operator, a procurement agency, a transportation manager, a Navy fleet unit, and the primary source of strategic mobility sealift for DOD. Before attempting to explain MSC operations, it is best to identify other principals in the Defense Transportation System.

SHIPPER SERVICES

First we will discuss shippers, or shipper services. "Shipper services" is a term used often. It generally refers to the Army, Navy, Marine Corps, and Air Force. But the military departments are not the only shippers of military cargo.

The Defense Logistics Agency (DLA) may well be the principal shipper of ocean cargo within the Military Establishment. The command has a wide range of responsibilities and a number of subordinate commands under its organizational umbrella. DLA organizations are responsible for the supply of military commissaries worldwide and the supply of subsistence items for troop consumption. DLA fulfills service requirements for general supply items and is responsible for the procurement and distribution of all fuel used by the military services.

Other major shippers include the Army and Air Force Exchange Service (AAFES) which supplies its farflung system of military exchanges through the Defense Transportation System (DTS). Several non-Defense organizations also use the system. One such organization is the U.S. Coast Guard, a Department of Transportation organization in peacetime which would become an element of the Department of Defense in any major emergency. The U.S. Postal Service makes certain that mail reaches overseas troops through the Army Post Office (APO) or Fleet Post Office (FPO) systems. While first class mail generally is airlifted, much still moves by surface transportation.

Still another shipper and user of DTS is the General Services Administration (GSA), the agency responsible for supplying the entire Federal Establishment. Military ocean terminals (MOTs) also may be categorized as shippers since they receive and consolidate military dry cargo for eventual loading aboard MSC controlled ships or movement under MSC contractual arrangements. MOTs handle primarily breakbulk ocean cargo, much of it vehicles and ammunition. Container cargo generally flows through commercial ports and industry-operated terminals.

MILITARY TRAFFIC MANAGEMENT COMMAND

A second group of key elements of the Defense Transportation System includes military line-of-communications—in the United States or in overseas areas where U.S. military forces are deployed. The agency primarily responsible for traffic management between the continental United States and overseas is the Military Traffic Management Command, or MTMC. Theater commanders are responsible for traffic management within the country and have authority to direct or shortstop containers. In peacetime, traffic movement is based on traffic management decisions made in the United States.

The point man, the front-line manager for all shippers, is the ITO—the Installation Transportation Officer. An ITO can be, as the name suggests, a representative of the commander of any base or post who is responsible for transportation functions. The person can be a designated member of the Coast Guard Defense Logistics Agency, General Services Administration, Postal Service, or a member of a Department of Defense depot or Military Ocean Terminal. An ITO might represent a central consolidation point, a CCP, which receives and consolidates military cargo for shipment over the ocean.

Traffic management functions can be performed by civilian vendors or a supply source, such as a manufacturer, or by military shipper. For example, vendors supplying the military exchanges with beverages, clothing, typewriters, or almost any other commodity might arrange for shipments directly to the user outside the Defense Transportation System. Construction equipment also can be moved this way. However, Defense-owned or Defense-procured material must move within the DTS. Acting as ITOs and in behalf of the procuring agency and shipper, suppliers—as authorized—may request, through appropriate channels, that containers be spotted at their factories for loading and subsequent line-haul to a port, ocean lift, or overland delivery to the consignee (figure 8-5).

ITOs directly represent the shipper, often fulfill traffic management functions, and interface with both MTMC and MSC. If one thinks of ITOs as spokes on a wheel, with the shippers represented by the outer rim, one can visualize their relationship with MTMC. MTMC is the hub, the key traffic manager in the Defense Transportation System. Just as MCS is the transportation operating agency for sealift, and Military Airlift Command for airlift, MTMC is the Defense agency charged with traffic management responsibilities. Unlike MSC and MAC, MTMC has no ships or aircraft. Its operating functions are confined to terminal operations. MTMC also contracts for civilian terminal services, such as stevedoring. MTMC is responsible for providing management advisory services to the shippers and for maintaining a reserve rail fleet—special cars that would be needed for overland movement of tanks and other heavy equipment in an emergency.

MTMC's traffic management resonsibilities do not extend to overseas theaters. Theater commanders retain authority for traffic management in-theater. However, theater commanders often designate organizations to fulfill traffic management functions. In Europe, for example, the 4th Transportation Brigade, an Army unit, is responsible for traffic management. In the United Kingdom, the 3rd Air Force is traffic manager.

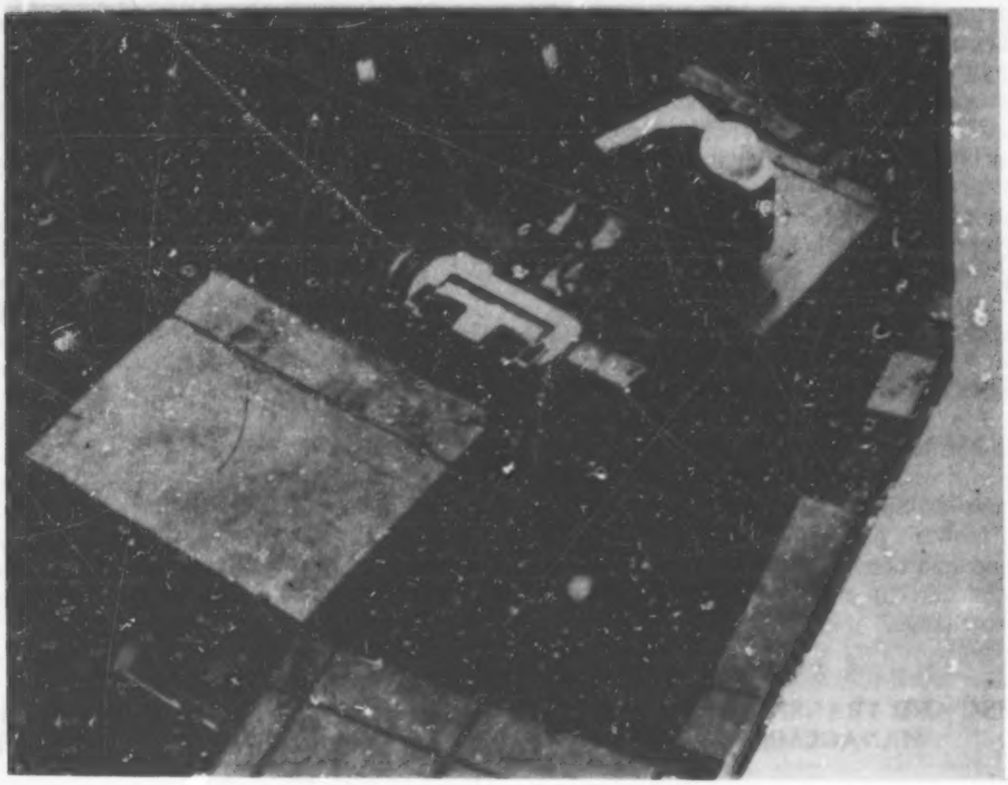

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Figure 8-5.—A container being loaded at point of origin.

In Korea, the designated traffic manager is the 8th Army.

MILITARY OCEAN TERMINALS

These units, like shippers, exercise control over the movement of cargo, but do not control ships or aircraft of the mobility operating forces. The units determine what is to be shipped and when and how it is to get there. They can request diversion of ships or aircraft to meet unexpected demands. As a ship operator and as a sealift procurement agency, MSC responds to requirements established by the shippers it serves.

Another category of DTS principals consists of terminal operators. Only a few military ocean terminals (MOTs) were in operation in the United States in 1982. Several are ammunition terminals. There are only three dry cargo terminals. One is on the East Coast, another on the West Coast, the third on the Gulf Coast. The terminals are controlled by MTMC. MTMC representatives also serve at U.S. seaports designated as outports. The representatives monitor the flow of military cargo through those outports, making certain that it reaches the port and is loaded aboard ships controlled by the Military Sealift Command or moved under MSC contractual agreements.

Some stateside terminals are operated by the U.S. Navy. Examples are those at the Naval Supply Center, Oakland, Calif., and the Naval Supply Center, Norfolk, Va. The Navy runs the terminals, but bills MTMC for cost of stevedoring support of cargo ships. MTMC, as the terminal operator for Defense, reimburses the Navy for stevedoring costs under an Army-Navy memorandum of agreement. Since MTMC's operating authority for terminals, like that for traffic management, does not extend to overseas theaters, theater commanders are responsible for operating in-theater ocean terminals and aerial terminals. Air terminals in the continental United States are operated by the Military Airlift Command (MAC) of the Air Force.

Theater commanders have designated MTMC as an operator of some overseas terminals. Included are the MOTs at Rotterdam and Bremerhaven in Germany; Leghorn, Italy; and Felixstowe, England. The MOT at Inchon, Korea, also is operated for the theater commander by MTMC. The Navy also operates overseas terminals. Examples include those terminals on Guam and at Subic Bay, Philippines; Pearl Harbor, Hawaii; Naples, Italy; LaMaddalena, Sicily; and another at Sardinia. The examples listed were current as of early 1982, but are subject to change.

MSC AND TRANSPORTATION MANAGEMENT

MSC controlled ships serve ports seldom visited by other elements of the Navy fleet. MSC is part of the Navy fleet with fleet and scientific support responsibilities. It operates tankers, dry cargo ships, roll-on/roll-off vessels, heavy lift ships, and specialized ships. It procures ships, shipping services, and even complete shipping systems needed to fulfill Defense ocean transportation requirements. Much of the sealift capability MSC maintains or contracts for with industry is incorporated into the Defense Transportation System. Thus, although there is no direct organizational link, the ocean carriers are an integral element of the Defense Transportation System. They provide much of DOD's sealift capability.

Included are tug and barge services MSC has contracted for (figure 8-6) to support military customers in Alaska, Cuba, and the Caribbean, as it supported the military in Southeast Asia during the war years. MSC contracted for dedicated intermodal service to Southeast Asia in support of troop operations there. Note, however, that all capability MSC currently procures from private industry is not included in DTS. Examples are ships chartered for the Near Term Pre-Positioned Force or acquired by purchase and held in readiness for the fulfillment of emergency needs. Ships chartered for the delivery of coal or petroleum products are other examples of assets not under the DTS umbrella.

MSC can provide almost any type of sealift service through the use of its contracting authority. The result is that the Defense Transportation System is flexible. The Defense Department can take advantage of the latest advancements in maritime technology. That is particularly important since Defense relies heavily on industry's augmentation of its limited organic resources.

The size of the MSC controlled dry cargo fleet was sharply reduced following the end of the war in Southeast Asia. Defense reliance on industry support increased. That increased the scope of MSC's role as a transportation manager. The acquisition of transportation systems from industry and the management of those systems by MSC were a logical and feasible means of fulfilling peacetime sealift requirements. Navy support of the maritime industry also helped assure that industry assets would be available if needed in a future emergency.

Some have difficulty in perceiving a distinction between traffic management—the exercising of routing control over the flow of cargo from the point of origin to the ship or aircraft that delivers it overseas; and transportation management—the exercising of routing control over cargo's inland journey to the user. The latter includes both the identification of resources and/or systems and the management of those systems or services to assure their reliability and productivity. The transportation manager is responsible for resource procurement and management, not for cargo flow.

Acquisition of shipping services and systems from private industry provides considerable leverage for the transportation manager. Since the Military Establishment pays the cost of service provided under some type of performance contract, and since the customer and transportation manager ultimately evaluate the adequacy of the service or system, the contractor is more apt to be responsive than a carrier who merely lifts

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Figure 8-6.—A typical tug and barge service contracted by MSC.

military cargo along with commercial cargo on an already established trade route.

There is considerable difference between transportation management and traffic management. The first focuses on obtaining and controlling services and systems. The second is primarily concerned with management of cargo flow.

In the mid-1970s and again in the late 1970s, efforts were made by DOD to consolidate MSC and MTMC. The intent was to increase efficiency and improve economy of the Defense Transportation System. The initial recommendation by DOD resulted in hearings by a special subcommittee of the House Armed Services Committee. DOD was advised to retain all three transportation operating agencies—MSC, MTMC, and MAC.

In the early 1980s, continuing scrutiny of DTS by the Senate Appropriations Committee again resulted in a recommendation to consolidate MSC and MTMC functions. Cost effectiveness and greater reliance on civilian transportation systems were key factors. DOD directed such a consolidation in late 1981, and plans were announced in early 1982 to establish a Military Transportation Command. The target date was October 1, 1982.

However, because of the complex relationships the two commands have with industry and because they support all elements of DOD, plans called for the Navy to continue to establish sealift policies, direct program implementation, and fund those programs in coordination with the commander of the new and unified command. The Army would continue to do the same for functions previously performed by MTMC—except that ADP, planning, and nonoperational functions would be fully consolidated almost immediately. As new funding arrangements were worked out (probably a combination of appropriated funding and a Defense Industrial Fund), the missions of the new organization would take shape—probably over a 2- to 4-year period.

To a significant extent, organizational problems that remained to be faced were the result of a changing world situation. Threats to peace as the result of an unstable Middle East, Soviet intervention in Afghanistan, the internal struggles in Poland, and other factors resulted in much stronger emphasis on U.S. sealift readiness. The Administration, Congress, and the American public all realized that to deploy U.S. forces in support of national policy requires ready and adequate sealift resources. The question being addressed was whether a peacetime transportation system oriented toward efficiency and economy also can produce sealift readiness, and whether it can deploy and support troops.

SHIPPER FUNCTIONS IN THE DTS

Both readiness and ocean transportation may become primary missions of a consolidated command, or readiness and fleet support missions assigned to MSC may remain with the Navy. These speculations are made only because it is impossible to predict in early 1982 what the ultimate missions and the structure of a new command would be. If that unified command materializes as expected when this text was prepared, a summary of key changes will have been added to the text. It will be revised completely when appropriate. In the interim, descriptions, illustrations, and terms used in this chapter remain substantially correct. Changes that may have been made are largely confined to the organizational structures of MSC and MTMC, not to the functions they historically have performed as part of the Defense Transportation System.

That system is not precisely structured or easy to explain. A better understanding of the roles played by shippers, traffic managers, terminal operators, MSC, and the private ocean carriers can be gained by a review of major taskings and the "language" used through DTS.

Primary responsibilities of the shippers are to evaluate logistical requirements and establish inventory and pipeline policies, to determine the availability of needed supplies and equipment, to procure those supplies and equipment, and to establish transportation requirements. Shippers designate the sources of military cargo. They determine whether it will be delivered by the shipper or through the Defense Transportation System. Shippers establish cargo consolidation points, designate any special handling requirements, set required delivery dates, and ultimately budget for and pay the transportation costs.

Shippers determine whether cargo will be overpacked (waterproofed) so that it can be moved in breakbulk ships rather than in containers. Shippers specify any special handling that cargo may require. A typical example is hazardous cargo, such as ammunition or chemicals. Cargo especially attractive to would-be thieves might also be given special handling.

Shippers determine if their cargo will be moved to a container consolidation point or allowed to free flow to a military ocean terminal for consolidation and stuffing into containers. Generally, for cargo generated in full container loads at a vendor's plant, the shipper will have containers stuffed at the point of cargo origin and moved directly to the customer.

If a shipper is consigning cargo to two or more customers from the same point of origin, he has several options. Cargo can free flow into a military terminal for consolidation, container stuffing, and shipment to a terminal or a designated overseas breakbulk consolidation point (OBC) for unstuffing and in-theater distribution; or, containers may be routed directly from a terminal to the customer. Cargo also can be stuffed at the point of origin and the containers routed to a breakbulk consolidation point for subsequent distribution to consignees.

Vendors or suppliers also may stuff containers for multiple consignees—called stopoff service. Boxes can be unstuffed at several different destinations.

The option chosen by a shipper may be based on cost—control the shipper wishes to exercise over the cargo while it is in-transit, on transit time, or any combination of factors.

As can be seen, shippers function as traffic managers. However, shippers delegate considerable management responsibility. Much of their traffic management authority is delegated to ITOs. ITOs are representatives of the shippers, the armed services, bases and posts, depots, ocean terminals, other Defense elements, the Coast Guard, Postal Service, and GSA. Even civilian vendors assume some ITO functions within DTS.

TRANSPORTATION TERMINOLOGY

Before giving a more detailed explanation of actions initiated by traffic managers, MSC, terminal operators, and carriers, readers should be familiar with some frequently used terms.

RU and LRU are frequently used abbreviations. The first means "release unit"—cargo that totals 10,000 pounds or more. An LRU is a "less than release unit"—cargo that totals less than 10,000 pounds. The distinction is important since RU cargo is managed from point of origin to the port and in-theater. LRU cargo tends to free flow to a port for loading aboard ship.

However, LRU cargo often can go to a depot or a CCP—a central consolidation point. CCPs are usually established by the shippers for the purpose of consolidating cargo for intermodal delivery. However, CCPs also handle breakbulk cargo since there often are advantages to the consolidation of such cargo. Generally, breakbulk cargo flows directly to MOTs or to commercial terminals in designated outports.

Military cargo that is moved overland by rail or truck often moves under a government bill of lading (GBL). A TGBL is a "through government bill of lading." Both describe the cargo and provide the documentation necessary for its control and for payment of transportation costs. Most ocean cargo moving under GBLs moves in the domestic trade between the continental United States, Hawaii, Puerto Rico, Guam, or similar destinations. However, military cargo destined for remote areas such as Australia or parts of Africa also is shipped under GBLs on scheduled liners.

Formerly, military cargo moving to or from foreign ports had to be cleared before it was shipped through a water terminal clearance authority (WTCA). WTCAs in the continental United States were part of MTMC. Overseas, WTCAs were controlled by the services or theater commanders, except for those they authorized MTMC to operate in their behalf. In late 1981, however, DOD directed immediate consolidation of WTCA functions in the continental United States and MSC bookings of ocean cargo to private carriers along with the administration of MSC contracts with those carriers.

The objectives were to reduce operating costs and manpower needs and to avoid duplication. A primary purpose of the WTCAs had been to provide a means of controlling cargo, particularly breakbulk cargo, flowing in ocean terminals. WTCAs also provided MTMC with information needed to identify low cost truckers or railroads for the overland movement of military cargo to and from seaports. These functions, along with MSC's cargo booking and contract administration functions, were combined in a Military Export Cargo Ordering and Booking Office, known as MECOBO. The units are located in MTMC regional commands, in MSC area commands and offices, or wherever needed to maintain day-to-day liaison with private carriers concerning their movement of military ocean cargo. While MSC's cargo-booking personnel are assigned to MECOBO on a temporary basis, they will become members of Military Transportation Command when that organization is established. That is also true for all other MSC and MTMC personnel.

Military cargo that is moved to or from foreign ports still must be cleared before it is shipped. The shipper is responsible for obtaining an Export Traffic Release (ETR). An Export Traffic Release Request (ETRR) is directed to MECOBO or to a WTCA in overseas areas where they are still operating. Because of the close relationship between MECOBO and MSC, transportation terminology can be confusing. But such terminology is important to an understanding of the transportation system. Terms that even the casual student of military sealift should be familiar with are RDD, POE, and POD. RDD means "required delivery date." A POE is a "port of embarkation," and a POD is a "port of debarkation." Another often used abbreviation is TCN, for "transportation control number." A TCN is assigned to each van and includes the shipper's address, type of van, voyage document number, serial number assigned by MECOBO or a WTCA, and guidelines governing the booking of the van. A TCN may include the letter M which stands for line-haul, L for local drayage, or K for pier booking in accordance with an MSC container agreement.

Before loaded containers arrive at a pier, the shipping activity has transmitted a transportation control movement document to MECOBO or to the WTCA overseas. Data on the TCMD are used in preparation of the ship manifest. They include the last five digits of the container number; an abbreviation that shows the name of the van owner; size of the van; the MILSTAMP water commodity code that identifies type or types of cargo in the box; the POE and POD; and the mode of shipment (for example, V for sea van). These data also include a two-digit number, first of which indicates that the van is leased or owned by a carrier. The second number indicates who stuffed the container; for example, a carrier, vendor, or shipping activity.

Other data listed in the TCMD include the TCN, name of consignee, transportation priority, RDD, whether the shipment is for single or multiple consignees, number of shipments in each container, day shipped, estimated arrival time at the destination, the van cube and number of pieces it carries, and the weight and cube of the total shipment unit. Also provided are information concerning the environment that must be maintained (i.e., temperature), size of the container ordered, stopoff information, and other pertinent data. If a van contains more than one shipment, a separate TCMD is made up for each shipment unit. Particularly important is the transportation account code (TAC) which indicates who will ultimately pay the transportation bill.

There is no doubt as to who pays. It is the shipper, the agency that generates the transportation requirements. Requirements are fed into the system well before cargo is actually available for movement. That allows boxes to be spotted at the source of supply, permits timely booking of ocean cargo, and provides time for cargo documentation.

CONTROL OF CARGO IN TDS

The key to the movement of container cargo through DTS is the container agreement negotiated by MSC. Defense cargo also may move under special contracts negotiated by MSC or under commercial tariffs to low volume traffic areas.

Foreign flag carriers may be used if necessary. In some instances, agreements with host nations or foreign government policy require the use of their carriers; an example is the use of Icelandic ships to move U.S. military cargo to and from that nation. Military cargo moving in the domestic trade, such as between Hawaii and the continental United States, is booked under commercial tariffs. That is done primarily because public law prohibits solicitation of special Government rates.

A series of actions is required to acquire, stuff, document, and move containers within DTS. Shipper requirements for container services are forwarded to MECOBO (or WTCA) as required by MILSTAMP and pertinent military directives. CONUS shippers, as a minimum, provide MECOBO with the number and size of containers, when and where they will be needed, their destination, priority of cargo to be shipped, and the RDD. The shippers also identify special handling needs. If shippers request specific sizes of containers, e.g., 35- or 40-foot boxes, they must provide detailed information concerning the shipment (weight and cube, commodity description, and so forth). These data help MECOBO assure effective use of containers.

MECOBO (or a WTCA overseas) verifies the accuracy and completeness of information provided by the shippers, then books the cargo. MECOBO routes the cargo and indicates the dates the containers are needed at the stuffing activity. Cargo is booked to an ocean carrier, generally under the MSC container agreement or other shipping contract, or booked aboard an MSC Controlled Fleet ship. MECOBO advises shippers as to the name of the carrier and ship, the POE and POD through which the container will move, the sailing date, and the estimated time of arrival at an overseas port. MECOBO also assigns a voyage document number that is incorporated into the TCN. MECOBO provides ETRs to the shippers and assigns a TCN for each container.

The close and day-to-day relationships maintained by MECOBO personnel worldwide with private carriers has many advantages for military shippers, particularly for high volume container stuffing facilities such as MOTs or CCPs. One benefit is "block booking." It allows high volume shippers to forecast container requirements 3 weeks before scheduled lift dates. Only the number and size (large or small) of containers required by the trade route are provided to MECOBO by the shipper. MECOBO books the entire block of containers to a carrier and issues a block of ETRs to the shipper. Volume shippers can coordinate with the carrier to position the containers for stuffing and pick them up for line-haul to port when stuffed.

Block booking assures that containers will be on hand when needed. That minimizes labor costs and curtails space required for cargo storage. Since shippers do not identify a consignee for each container in advance, they can consolidate cargo as it is generated and make more effective decisions concerning multiple consignees or stopoffs for the containers.

The TCMD submitted by the shipper to MECOBO or to an overseas WTCA links van serial numbers to the TCN and provides a basis for the manifesting of cargo and the monitoring of containers as they flow through the system.

Line-haul and/or drayage for containers is ordered by MECOBO under terms of the MSC container agreement. However, as noted previously, cargo also can be moved under special contractual arrangements or under commercial tariffs. The Defense Department still can use organic equipment to move containers overland or even on the ocean leg. Some MSC Controlled Fleet ships can carry a limited number of boxes aboard ship to remote areas or when some unique military purpose requires it.

When containers arrive at a POE, as specified in MECOBO-issued shipping orders, carriers advise MECOBO of their receipt and lift as stipulated in the container agreement. When cargo is loaded aboard nonscheduled vessels under other-than container agreement arrangements, additional information is required from the carriers.

Since MECOBO now is responsible for carrier compliance with contractual agreements with the military, coordination is close and continuing with no duplication of effort. Carriers are expected to keep MECOBO advised of delays, ship diversions, or any other factor affecting shipments. In turn, MECOBO keeps the shipper services advised of the status of their cargo.

Upon its arrival at a POD, cargo already has been cleared by MECOBO for onward movement—arrangements having been based on information in advance cargo traffic messages and the ocean manifest. Customs clearance has been obtained by the WTCA (or MECOBO) in-theater. If a manifest indicates inland delivery will be made by the ocean carrier, that begins automatically as provided for in the MSC container agreement. If the manifest provides for delivery at the carrier's terminal, inland transportation arrangements are made by the organization designated by the theater commander. When delays are necessary for cargo moving under the MSC container agreement, MECOBO offices in the pertinent theater arrange for container storage, short stop, or diversion. These actions, of course are in response to requests by appropriate theater authorities. Such actions require the amending of manifests by MECOBO to reflect revised arrangements with the ocean carrier to support payment of related costs.

A container shipping cycle is complete when consignees receive the containers and unstuff and release them to a carrier for line-haul to an ocean terminal. Carriers must deliver containers to the consignees during normal duty hours, spot them where directed, and return them when empty. Consignee responsibilities include safe handling of the containers, prompt unstuffing, and the reporting of cargo discrepancies. Examples of the latter are pilferage, damage, or shortages. When containers are not released in a required time frame, carriers may assess detention charges which increase the cost to the shipper. Ultimately, those increased container detention rates are reflected in higher MSC billing rates.

Documentation of containerized cargo under the MILSTAMP system is provided principally by the TCMD and the ocean cargo manifest. The TCMD is prepared by the shipper. The ocean manifest is prepared by MECOBO from the TCMD. Particularly important, in addition to the data previously listed, are specific commodity description and freight classification numbers.

Under the MSC container agreement, military cargo is listed in three major categories—general cargo, vehicles, and refrigerated. Rates are established for each category by major trade route. However, commercial cargo rates cover specific commodities plus an NOS (not otherwise specified) category. When commodity rates are lower than NOS rates, shipper costs can be reduced if booking agents know the types of cargo being shipped and are familiar with rates offered by the carriers.

Another means of reducing transportation cost is the use of automated data processing systems to speed documentation data between DTS participants. Input to ocean manifests, for example, is largely automated in the continental United States and in major overseas areas. Manifest data are used by MSC to support payment of the ocean carriers and to substantiate billing of the shippers. ADP helps improve both processes.

MSC billing procedures are covered in the chapter on financial management. Basically, ocean carriers submit invoices to MSC for services performed, in conjunction with shipping orders now issued to the carrier by MECOBO. MSC bills the services at standard rates which cover expenses. Billing rates developed by MSC and approved by Defense simplify the recouping of costs incurred in the movement of military cargo by commercial carriers. MSC published rates for general, vehicle, and refrigerated cargo cover costs of line-haul and drayage, ocean lift, detention, stopoff, and other services. For a given cargo category on a given trade route, all shippers are billed at the same rate without regard to specific services ordered by MSC, or used by the shipper services. MSC billing rates are published in COMSC Instruction 7600.3.

MTMC also establishes billing rates designed to recover the cost of providing traffic management and terminal services. They cover expenses for receiving, staging, booking, stuffing, and documenting cargo. The documentation service charge recovers the MTMC cost for the routing of cargo, selection of a POE, booking the cargo to MSC or commercial carriers, and manifesting and providing the shippers with in-transit performance data. Rates for all services are listed in DA Pamphlet 55-3, MTMC Port Handling and Billing Rates.

DISTRIBUTION OF CARGO IN DTS

Within DTS are a number of specialized distribution systems, each designed to meet shipper needs. These include Containerized Ammunition Distribution System (CADS) and the Direct Commissary Support System (DICOMSS). Others include the Direct Support System (DSS) and the Army and Air Force Exchange System (AAFES). Other systems are tailored to meet particular needs of Navy and Air Force shippers. In addition, specialized procedures provide for handling of hazardous and refrigerated cargo.

The CADS was developed as a result of the decline in availability of commercial breakbulk ships in the 1970s. The CADS continuously tests the feasibility of container movement of ammunition from U.S. depots to storage points overseas. In the early 1980s, only military vans were used for CADS shipments from MOT, Sunny Point in North Carolina to northern Europe. Defense initiated other actions to increase the use of ammo containers, including the use of commercial services. These, too, were primarily for the support of troops in Europe.

Problems associated with containerized delivery of ammunition stems directly from inherent hazards of explosives. Movements must meet standards established by the Coast Guard, the Association of American Railroads, overseas commanders, and foreign governments. They concern safety constraints, weight limitations, and a variety of clearance requirements that extend far beyond those for other types of cargo. A good reference for more detailed information concerning the CADS and the container movement of ammunition is the handbook developed by the Army Material Development and Readiness Command.

The DICOMSS is used by the Defense Logistics Agency to provide nonperishable brand name items for resale and nonperishable troop-issue subsistence items to overseas military commissaries. The DLA-originated system eliminates the need for large inventories in overseas depots, a goal met by intermodal lift of supplies, packed in containers, directly from the vendors or through CCPs to selected commissaries.

DICOMSS shipments to the European area are consolidated and containerized at the Defense Depot, Mechanicsburg, Pa. Shipments to the Pacific are handled by depots at Memphis, Tenn., and Richmond, Va. A substantial volume is stuffed at its source by the vendors. Both depots and vendors use the "block-booking" system to assure that containers are always available. In recent years, the DICOMSS system was expanded to provide stopoff service for commissaries not large enough to need full container loads.

The DSS is the Army standard distribution system for selected classes of supplies. Examples include repair parts, packaged petroleum, construction material, and clothing. Objectives of DDS are to reduce overseas shipment time, limit inventories at intermediate levels, and improve visibility of both requisitions and in-transit material.

DSS cargo is consolidated at three designated Army depots for direct shipment overseas to supply support activities that provide both direct and general support to military units. The New Cumberland Army Depot supports Europe. The Red River Army Depot supports the Canal Zone area. The Sharpe Army Depot supports Alaska, Hawaii, and the Pacific. Each can request containers by the "block-booking" system.

Container consolidation points have been established at Atlanta, Chicago, and Oakland by the Army and Air Force Exchange Service. Since AAFES is a nonappropriated fund activity, it pays for line-haul of cargo from CCPs to the port. Ocean lift costs are paid from appropriated transportation funds in service budgets. So are overseas, in-theater, line-haul costs. The governing authority is DOD Directive 1330.2.

Since AAFES is a large volume DTS shipper, it relies on block-booking to assure the containers are at the CCPs in advance of the cargo. The ultimate goal, of course, is to have both arrive simultaneously. Because it pays CONUS line-haul costs, AAFES arranges for movement of its cargo to the POE. However, much of the AAFES cargo moves directly from a supplier or vendor to the POE.

To manage effectively the flow of its containerized cargo within the DTS, the Air Force also has set up CCPs. They are located on the West Coast at Travis Air Force Base in California and at Warner Robbins Air Force Base in Georgia. Vendors also arrange the movement of considerable Air Force cargo from supply points to the POEs. The Navy consolidates intermodal cargo at the naval supply centers in Oakland and Norfolk, but it also has cargo moving directly from suppliers or vendors into the DTS.

General Services Administration intermodal cargo flows through five consolidation points. They are located at Bell Mead, Md.; Edison, N.J.; Harahan, La.; Stockton, Calif.; and Auburn, Ga. Navy, Air Force, and GSA take advantage of block-booking to match up cargo and containers at consolidation points, thus limiting cost, storage, and repeated handling of cargo.

All CCPs and depots handle cargo in release units. They can also ship LRU cargo to the MOTs as low-volume shippers do. LRU cargo is consolidated at a terminal and booked to ships by MECOBO. An MOT is, in effect, a CCP for low-volume shippers. Terminals and MTMC-designated outports handle the bulk of breakbulk cargo moving within DTS.

Breakbulk cargo is offered and booked in much the same manner as intermodal cargo. It moves primarily under MSC shipping agreements (comparable to container agreements) or in MSC Controlled Fleet ships. Special procedures cover the handling of refrigerated and hazardous cargo. These procedures apply to both intermodal and breakbulk shipments. Ammunition, for example, gets special handling whether moving in the CADS or in bulk lots in breakbulk ships.

Other types of hazardous cargo are flammable liquids and solids, oxidizing materials, corrosive liquids, compressed gases, and poisonous substances. Transportation of hazardous cargo is subject to Code 49 of Federal Regulations, standards set by the Intergovernmental Maritime Consultive Organization (IMCO), and the International Maritime Dangerous Goods Code.

Detailed information concerning hazardous shipments is provided to the ocean carrier well in advance of shipment. Carriers often limit the amount of hazardous cargo carried at one time, a practice that intensifies cargo management and documentation tasks. Hazardous cargo must be clearly labeled and the special precautions specified must be taken throughout the system. Import and export restrictions on hazardous cargo also are strict.

Refrigerated or reefer cargo is booked in the same manner as dry cargo. Terms and conditions that apply to the carriers are more detailed than for dry cargo and are spelled out in the container and shipping agreements. Included are a printed readout of temperatures required during transit.

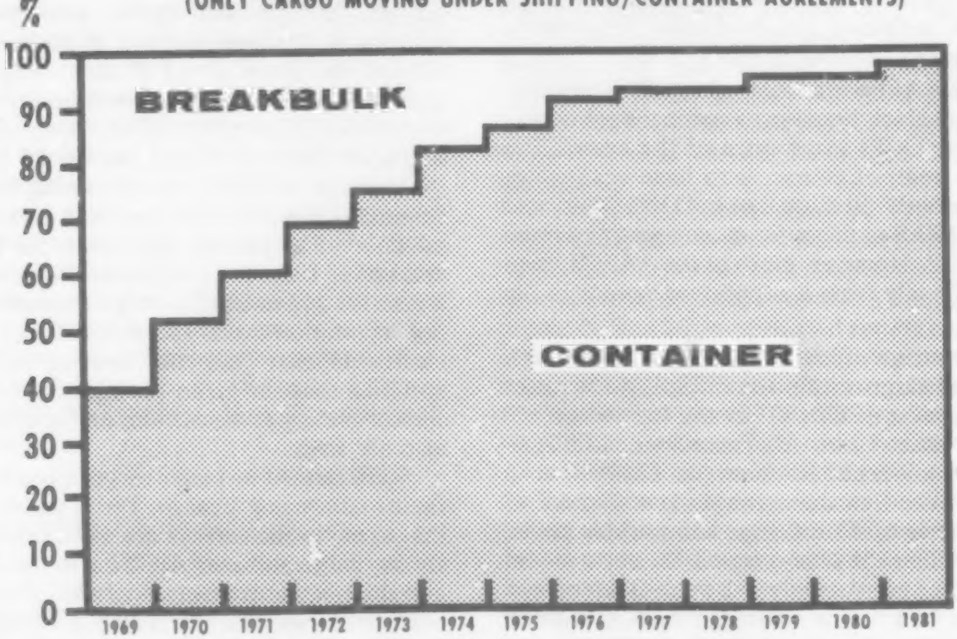
Container agreements spell out environmental requirements, provide for payment of special rates for maintenance of temperatures while the containers are in detention, and set container precooling requirements. Since refrigerated containers are in short supply, management of their movement is intensified to avoid shortstopping or unnecessary delay. Daily status reports often are required from theater commanders concerning the whereabouts of refrigerated containers.

The percentage of military dry cargo moving in containers since World War II has steadily increased. Although it is difficult to pinpoint when MSC began booking military cargo in significant volume on intermodal carriers, military shippers were enthusiastic about container movement of ocean cargo in the early 1960s. A significant surge in containerized movement came early during the war in Southeast Asia. MSC negotiated special contracts with commercial carriers who not only delivered cargo in great volume in large and fast container ships, but also built port facilities necessary to handle ships' discharge and loading.

By fiscal year 1974, about 45 percent of all MSC-booked dry cargo was moving in intermodal carriers. In 1980, more than 65 percent moved in containers. Of cargo which was containerizable, more than 75 percent was delivered in containers. Perhaps a more convincing illustration of the scope of service MSC obtains from commercial industry is evident when one considers only military cargo moving under shipping or container agreements. That is the bulk of military ocean cargo. Better than 95 percent of the cargo lifted by commercial carriers as the result of MSC competitive procurement agreements is lifted in containers (figure 8-7). Intermodal delivery has become the norm for the Defense Transportation System.

CARGO PERCENTAGES MOVING UNDER MSC COMPETITIVE PROCUREMENT AGREEMENTS

(ONLY CARGO MOVING UNDER SHIPPING/CONTAINER AGREEMENTS)



BREAKBULK	60%	48%	40%	31%	25%	17%	13%	8%	7%	7%	5%	5%	3%
CONTAINER	40%	52%	60%	69%	75%	83%	87%	92%	93%	93%	95%	95%	97%

SOURCE: MSC LINER AGREEMENT DIVISON, M-10-2

30.184

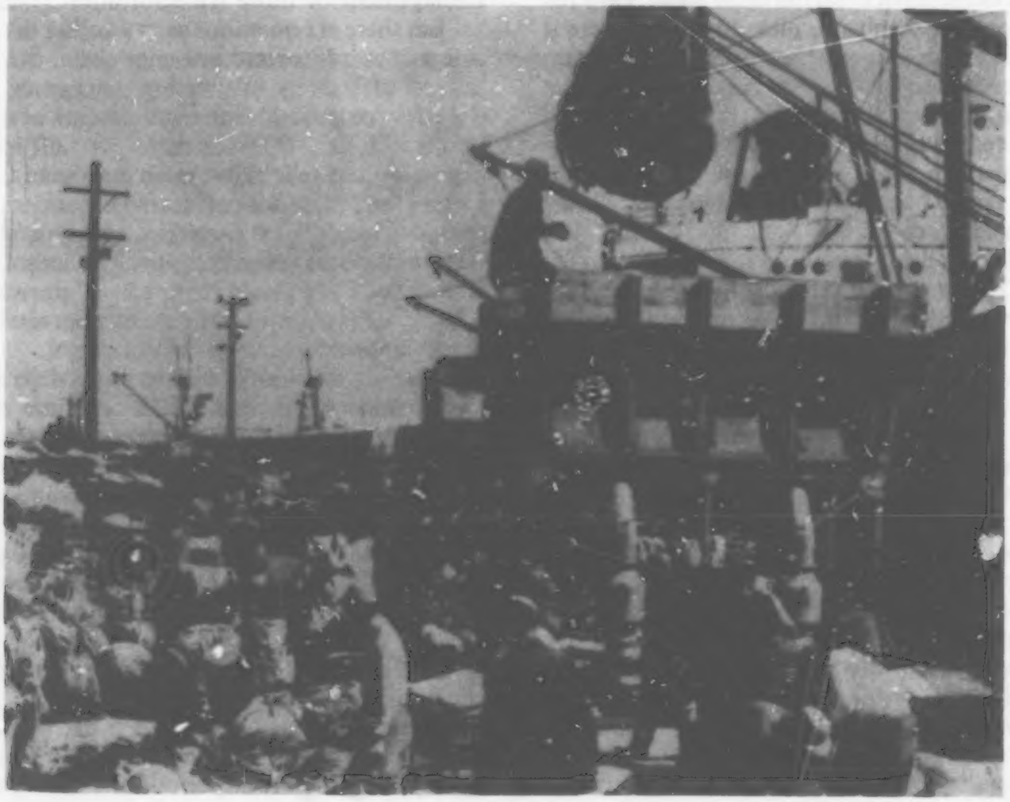
Figure 8-7.—Cargo percentages moving under MSC competitive procurement agreement.

That does not mean breakbulk service is not used in peacetime, or would be unavailable in an emergency. Breakbulk service accounts for approximately a third of military dry cargo deliveries (figure 8-8). Service is provided by scheduled commercial liners under MSC shipping agreements as well as by ships in the MSC Controlled Fleet. Shipping agreements set the terms and conditions carriers must meet. Rates are secured at the same time and in the same way as those for container service. As indicated earlier, the breakbulk cargo moving in DTS is handled in much the same way as intermodal cargo. Requirements are established and cargo is booked the same way. Its flow to seaports parallels that of intermodal cargo.

MOTs and outports used for military cargo shipments ring the continental United States. Examples include Bayonne, N.J.; Baltimore, Md.; New Orleans, La.; Charleston, S.C.; Mobile, Ala.; Beaumont, Texas; San Diego, Port Hueneme, and Oakland, Calif.; and Seattle and Tacoma, Wash., among others. Military terminals for the loading of ammunition for ocean shipment include those at Earle, N.J.; Concord, Calif.; and Sunny Point, N.C.

MSC FUNCTIONS IN TDS

With the transfer of cargo-booking functions to MTMC, along with responsibility for assuring commercial carrier compliance with contracts negotiated between those carriers and MSC for ocean transportation, DOD sought to remove



30.185

Figure 8-8.—Breakbulk service in Puson, Korea.

what some perceived to be duplication of traffic management efforts.

The result, as far as MSC is concerned, is that the command now has three primary DTS functions. It functions as a procurement agency, securing ships and shipping services necessary to meet projected or emergency military requirements. It is a ship operator, manning, maintaining, and operating dry cargo ships. And, it is a manager of the transportation assets and systems it provides.

As a ship operator, MSC controls dry cargo ships that provide both scheduled and tramp service. Typical of scheduled sealift support it provides is the Combined Service managed by MSC, Pacific. It includes ships from MSC, Atlantic as well. Combined service ships operate between the U.S. East and West Coasts and military installations throughout the Pacific Ocean area. Service is provided on a 35- to 40-day cycle. Tramp service, on the other hand, calls for MSC controlled ships to pick up cargo where it exists and to deliver it where shippers designate.

The MSC controlled dry cargo fleet consists primarily of breakbulk ships, a type especially well-suited to meet high-volume military needs. The ships can carry almost any type of cargo. Other types have been added as MSC has modernized its capability. Now, the dry cargo fleet has roll-on/roll-off ships especially well-suited for peacetime carriage of vehicles. RO/RO ships are highly versatile for support of troops in contingency situations where port support facilities are less than ideal. MSC also has added a barge carrier to its fleet. It is committed, however, for support of forces deployed in an emergency as part of the MSC-operated Pre-Positioned Force. MSC operates no container ships.

MECOBO, the booking function now assigned to MTMC, includes almost all the MSC personnel previously involved in cargo booking. Essentially, they perform the tasks they did prior to their assignment to MTMC. They book dry cargo to private carriers that provide services under the MSC-negotiated shipping and container agreements. They book cargo to contractors who provide tug and barge service, such as that to Guantanamo Bay, Cuba, and to Alaska or to other contractors providing service, including container service under MSC-negotiated contracts. They also book cargo for delivery by MSC Controlled Fleet ships. DOD priorities for use of those ships remain essentially the same—delivery of shipload lots or providing service to areas where liner service is inadequate or lacking. Controlled Fleet ships also carry the bulk of hazardous dry cargo, typically ammunition.

Options open to MTMC booking specialists provide flexibility the Defense Transportation System needs to meet peacetime lift requirements. When unique sealift needs exist, or when peak requirements exceed DTS capability, MSC can procure additional ships or added services to meet those needs. The peacetime DTS is versatile, flexible, reliable, and economical. DTS traffic management is more centralized than it was with a single agency; now it allocates cargo to private carriers and to the DOD's organic fleet, MSC. The sealift command now can focus its attention on procurement of the types of services and systems needed to meet military requirements, and the management of those transportation systems.

But there are questions as to whether the DTS, oriented as it is toward intermodalism, can function as effectively in meeting emergency, contingency, or general war requirements as it does in peacetime. DTS focuses on efficiency, economy, and reliability. In an emergency, those factors are less dominant. Rapid expansion, wartime ship losses, crew shortages, and geographical factors all would come into play. The limited MSC Controlled Fleet would require its augmentation; the shift of privately owned ships from service on world trade routes to military control.

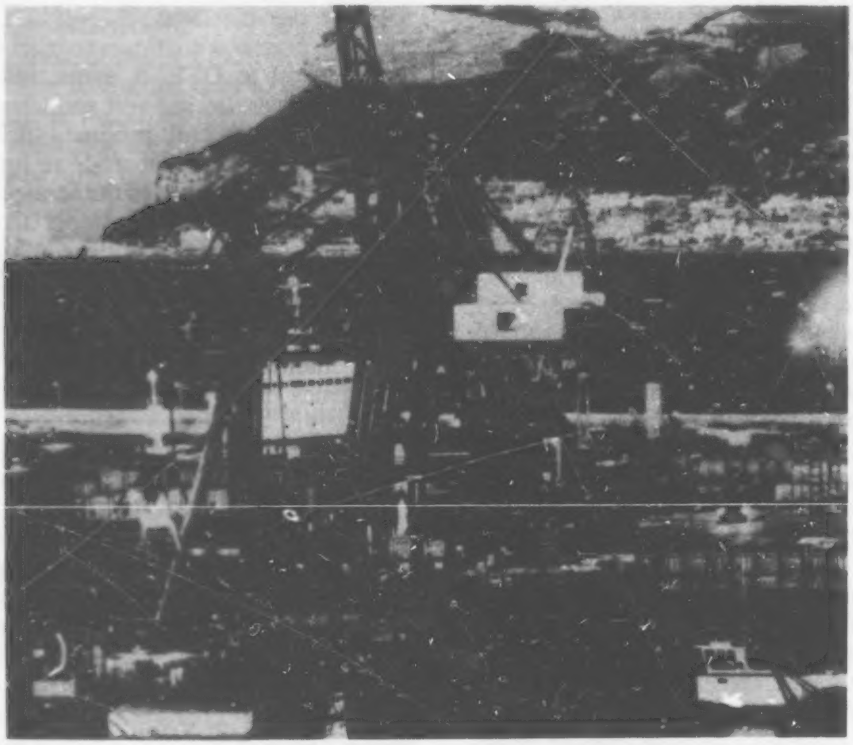
There is no simple answer as to what needs to be done to increase DTS wartime sealift capability, or what can be done to make the transition easier and more effective. It is obvious, however, that assuring logistical support of deployed troops requires that effort must be exerted simultaneously in several areas; in logistics management, traffic management, transportation management, mobility planning, military procurement of private ships and services, and development of immediately responsive sealift readiness capability.

These are the considerations on which the DOD has based its plans to create a single agency for surface transportation. The final structuring of that organization will take several years. Many procedural problems need to be worked out. Funding is but one example. Beyond that lies the larger question—whether developing strategic mobility and sealift readiness can be accomplished by increasing military reliance on a DTS that is so closely tied to, perhaps inexorably linked to, the privately owned, commercially oriented U.S. maritime industry. That question is given an added dimension by the history of the industry. The record shows great declines in capability in periods between major wars and continuing reliance on Government both as a shield from foreign competition and as a source of economic assistance. Those are not criticisms of the industry, but rather matters that must be included in any consideration of U.S. military sealift capability.

There are other factors that any student of transportation should keep in mind. Typical questions include: What will the role of private ocean carriers be in a contingency operation? Will carriers continue to deliver cargo inland with their own tractors and chassis or will the military take on that burden? Will support be provided by host countries to assure that ocean cargo flows from ports to the forward combat area? When will ports capable of handling intermodal ships be available?

It is easy to destroy or sabotage giant cranes and other support port facilities needed for the discharge of container ships (figure 8-9). One hand grenade, for example, could put a crane out of commission for months.

There always will be a question as to whether truck and rail systems can expand rapidly enough to support a major deployment of military forces overseas. Getting the right cargo at the right port for loading aboard ships is a major task. If cargo floods port areas, the military would be faced with a monumental task in acquiring additional ships



30.186

Figure 8-9.—A shore-based crane.

and expanded services in a short period of time. Sealift augmentation resources are limited, as chapter 12 will point out. Would ships be available? In the right numbers and type? To what extent can the United States depend on ships to be made available by its Allies?

All of these are questions addressed in mobility planning and in development of sealift readiness. Those subjects are covered in chapter 12 of this text. But they relate to and cannot be separated from any description of the Defense Transportation System, since DTS is the base on which wartime expansion is structured.

Since cargo booking no longer is an MSC function, a detailed explanation of how it is accomplished is not necessary. It is of value, however, to recognize the change has taken place and that additional change is contemplated with regard to DTS.

In late 1981, dry cargo booking and the administration of MSC contracts with private carriers were assigned to MTMC. It was part of a newly established Military Export Cargo Ordering and Booking Office (MECOBO). Until that time, MSC area commands were primarily involved in the performance of those functions. Most of the responsibilities were assigned MSC, Pacific and MSC, Atlantic—MSC ship operating commands. However, overseas area commands and even some offices were involved to some extent in the booking of cargo. They were even more involved in liaison with shippers and carriers.

Both MSC, Atlantic (LANT) and MSC, Pacific (PAC) had transportation offices. They controlled branches such as Breakbulk Traffic, Container Agreement, and Domestic and BGL Traffic. Specialists in those branches received requirements from MTMC, maintained day-to-day contact with the shippers, and booked dry cargo aboard privately owned or MSC Controlled Fleet ships. They did so after determining which was the lowest cost by a fully responsive shipper. They also made arrangements for special handling of cargo, perishable or hazardous.

To do their job, they had to be familiar with current shipping rates and capabilities of the carriers. They developed and maintained industry contacts that enabled them to resolve unanticipated problems. They made certain that MILSTAMP policies were adhered to, and that the service provided met the requirements of shipping and container agreements. They analyzed cost effectiveness of ships and transportation systems, determined when and where containers needed to be spotted, and made arrangements for them to be there in the right number. They made certain that cargo was booked aboard ships that could meet RDDs, such as those of DSS which wants cargo to be in the supply pipeline no longer than 2 weeks. When delays occurred, particularly for perishable items, MSC specialists were responsible for overcoming problems and speeding cargo on its way. MSC also arranged for movement of domestic cargo under commercial tariffs, often under GBLs.

These functions are now performed by MECOBO and other MTMC personnel. As noted earlier, MSC's primary roles in the DTS picture are those of a ship operating agency, a procurement agency for acquisition of ships or services needed for military ocean transportation, and as the manager of the ships and transportation systems it provides in support of Department of Defense organizations.

The command continues to meet requirements not integral to DTS. It mans, maintains, and operates Navy fleet support and scientific support ships. It delivers bulk products such as coal for the military services and crude oil for the Department of Energy as part of the Strategic Petroleum Reserve Program. Most important of all are MSC's responsibilities in developing and maintaining strategic sealift support capability for the Rapid Deployment Force. MSC is responsible for the Near Term Pre-Positioned Force and for other ships maintained in readiness for support of emergency troop deployments.

MSC TRANSPORTATION OF PETROLEUM-OIL-LUBRICANTS

MSC has a worldwide ocean transportation mission, unrelated to the Defense Transportation System, which is the carriage of petroleum-oil-lubricants (POL) for use by the Army, Navy, Marine Corps, and Air Force.

Worldwide procurement of fuel for the military services is a responsibility of the Defense Fuels Supply Center, an element of the Defense Logistics Agency. Fuel requirements are established by the services. Requirements flow first to

DFSC field offices and then to DFSC headquarters in the Washington, D.C., area.

DFSC has to buy the needed products and assure their delivery. One alternative is to have the supplier deliver the fuel directly to the user. A second is to levy transportation requirements on MSC. Long-range lift projections are provided to MSC by DFSC on an annual basis and are amended as required. They are used by MSC in preparing its annual budget, in configuring the size of its controlled tanker fleet, and in planning for acquisition of additional ships when requirements demand such action.

Theoretically, DFSC provides MSC with firm lift requirements at least 45 days before the date the cargo is to be available. However, in periods when prices of crude oil and refined products are increased repeatedly, often dramatically, notification can be received as little as 21 to 28 days before the required loading date. The picture also can be complicated by changing patterns in procurement. An example is past situations in which it was more cost effective to procure petroleum products at United States or Caribbean refineries and deliver them to Europe than to buy them in Greece, which is much nearer to the ultimate destination. A loading site for an MSC tanker can change almost up to the proverbial "last moment."

That illustrates the complexity of tanker scheduling actions by specialists in MSC headquarters. They designate a ship to meet each requirement, notify the master, and maintain communication with the ship and shipper to assure that everything goes smoothly. In matching requirements to tankers, MSC schedulers may choose any MSC Controlled Fleet tanker. That fleet is made up of Government-owned, bareboat chartered, and time and voyage chartered tankers.

MSC tries to configure its controlled tanker fleet to be capable of meeting approximately 95 percent of annual projected lift requirements. Size of the fleet and type of ships available are restudied each year following receipt of long-term lift projections. In the past, when tankers were more available in the market, MSC structured its fleet to handle about 75 percent of projected requirements. However, costs and difficulty of obtaining tankers forced greater MSC reliance on its controlled fleet.

When controlled fleet tanker capability is inadequate to meet operational requirements levied by DFSC, MSC goes to the open market for charter of additional tankers. Procurement specialists may spot charter tankers from oil companies or tanker operating companies. They may charter foreign tankers if U.S.-owned vessels are not available or cannot meet lift requirements. They also can withdraw tankers from the National Defense Reserve Fleet, many of which formerly were operated by the command.

Once a tanker has been matched to a cargo requirement and the cargo delivered, a tanker may pick up a return load or sail to a totally different area to meet a new requirement. Ship diversion and rescheduling actions are so frequent that MSC Controlled Fleet tankers often sail around the world before returning to a stateside port. Few MSC tankers operate on anything that might be called a schedule. The guiding rule is always to produce the greatest possible lift capability at the lowest cost.

Fuel requirements originating with overseas organizations are processed in a different manner from those originating in the continental United States. The major reason is that theater commanders or commanders in chief (CINCs) establish requirements for petroleum products to support their operational, contingency, and general war plans. They control the distribution and storage of petroleum products just as they control the flow of dry cargo in-theater.

Theater requirements flow from Army, Navy, Marine Corps, and Air Force elements to the Joint Petroleum Offices, more commonly referred to as JPOs. In many theaters, subarea petroleum offices (SUBAPOs) supplement JPOs, particularly those that cover a vast geographical area or where requirements may be greater in a particular area of the theater.

Analyzed, validated, and approved by JPO, theater fuel requirements are forwarded to DFSC for procurement of the products and establishment of worldwide lift requirements that are then provided to MSC.

In some overseas areas, DFSC maintains field offices as it does in the states. They usually are located near theater JPOs and are responsible for receiving and coordinating movements of fuel, as well as advising and assisting theater commanders in fuels management. Unlike the ocean terminals

MTMC operates, DFSC regional offices in overseas areas are not established at the request of the theater commander. Neither are they responsible to the theater commander. Management functions they provide are mutually beneficial to DFSC and theater commanders, but regional DFSC offices overseas remain under the organizational umbrella of DFSC and Defense Logistics Agency. DLA is the parent command for DFSC.

With tankers operating around the world and from pole to pole, effective communications among MSC headquarters, ships, area commands, and offices is a must. All MSC controlled tankers, Government-owned, contract operated, and long-term chartered, are equipped with maritime satellite systems. A tanker master can contact MSC almost immediately and MSC operations personnel can divert ships or change operational orders equally rapidly.

MSC also can reach its shore-based units through the Defense Communications System. While Navy fleet combatants and MSC tankers are not linked directly either through a maritime satellite system or the Navy Communications System, they can reach one another. A Navy fleet ship can call a Navy ground communications station, ask for a hookup with the maritime satellite system, and then communicate with an MSC tanker. The signal may travel thousands of miles to reach a tanker only a few miles away, but the time it takes is measured in minutes, not in hours needed to reach a distant ship before satellite communications were introduced.

The role of MSC area commands and subarea commands in the delivery of petroleum products is a smaller one than in movement of dry cargo. With tankers scheduled from MSC headquarters and with contact among the shippers, and with DFSC and MSC also controlled at the headquarters level, area commands carry out only tanker functions directly assigned by headquarters. Advantage is taken, of course, of the worldwide MSC organization. MSC area commands and offices support tankers that visit ports in their areas, helping out with procurement of supplies and services and handling of mail. However, even that support is less demanding than for dry cargo ships since many MSC controlled tankers are either contractor operated or chartered. Contractors and owner-operators make many arrangements for support of their ships through civilian husbanding agents.

Three small MSC tankers, all T-1s, were assigned to area commands for operation in early 1982. They provide shuttle service in certain theater areas. One is assigned to MSC, Pacific and supports operations in the mid-Pacific area to fulfill theater requirements established by CINCPAC. Two T-1s are controlled by MSC, Far East.

Except for unique and generally limited requirements for delivery of fuel, such as heating oil for military installation in the Northeast United States and thermally stable fuels for Air Force aircraft that reach the upper limits of the earth's atmosphere, MSC tankers deliver five basic types of refined petroleum products used by aircraft, ships, and ground vehicles.

Without POL supplies delivered by MSC Controlled Fleet tankers, the ability of U.S. Armed Forces to sustain combat operations—even peacetime operations—could not be assured.

Ships and transportation systems provided by MSC are, as previously stated, a means to an end. The end-product is mobility of the U.S. Armed Forces. Fighting forces can be successful in achieving their national security missions only if they can be reinforced by the transportation elements of the Department of Defense, augmented by the civilian transportation industry.

SUMMARY

What conclusions can be drawn from this review of the Defense Transportation System? It should be clear that the DTS does not fit any classic description of the word "system." While relationships exist among a number of elements, and there is a mutuality of interests since transportation is a primary objective of their efforts, the result is not a traditional organization. Communication flows in all directions rather than vertically up and down a chain of command. Policies stem from the needs of all the military services and, while DTS procedures are standardized to a great degree through MILSTAMP, DTS does not operate "by the book."

Nevertheless, DTS is more than a casual relationship among military organizations involved in or supported by ocean transportation systems. DTS is unusual in that day-to-day cooperation between private industry and the military departments is both routine and necessary. Without participation of ocean carriers and other elements of the private sector transportation industry, the military services would not be able to support logistically peacetime or wartime deployment of the U.S. Armed Forces.

But Department of Defense reliance on private sector transportation to provide the mobility and logistical support the U.S. military forces require creates a conflict that eventually must be resolved. DTS is essentially oriented toward attainment of high productivity, economy, and efficiency of transportation operations by relying heavily on profit-oriented private industry. It operates on point-to-point movement of military material through a distribution system geared to make a profit. Private industry cannot be expected to make significant capital investments in development and maintenance of assets or systems to provide the surge capability needed to meet high-volume ocean transportation demands that any major emergency might create unless the Department of Defense is willing to underwrite that investment. Thus, DOD must take actions to develop sealift readiness capability either by programs outside DTS or by adapting DTS procedures to produce sealift readiness capability above that needed to support peacetime requirements. Some of the programs and or procedures underway will be discussed in chapter 12.

Important roles within DTS are played by the services which establish international transportation requirements, both long and short term. These services also are shippers, procuring supplies and equipment and arranging for its transportation to and from seaports and over the oceans. The three DOD transportation operating agencies have vital roles. Military Airlift Command operates aerial terminals and moves military cargo using organic airlift capacity and services and aircraft provided by the private sector. Military Sealift Command operates ships, procures ships and shipping services, and manages the transportation systems it provides. Military Traffic Management Command receives projected lift requirements, books ocean cargo to private carriers or the MSC Controlled Fleet ships, and maintains liaison with those carriers to assure compliance with contracts MSC negotiates. It manages the flow of DOD cargo in the continental United States.

MTMC also operates ocean terminals and supervises ship loading at designated outports, doing so in many ports overseas as designated by theater commanders. That theater commanders control transportation operations within their theaters is an excellent example of the fact that while the military services move cargo worldwide, DTS is not a worldwide system in the organizational sense. It provides a systematic means of achieving transportation objectives because of shared responsibility and mutuality of effort.

In reality, DTS includes a number of systems. An example is a set of procedures for movement of Army or Air Force Exchange cargo. Other procedures provide for international movement of troop subsistence items and stocks and supplies for military commissaries. Yet, one large-scale DOD transportation mission, delivery of petroleum products worldwide for U.S. Forces, is completely outside DTS. So is the international delivery of dry bulk supplies such as coal.

MSC provides ships to fulfill service requirements for lift of both dry bulk cargo and liquid cargo. The command also has, as noted, three clear-cut roles within DTS; ship operation, procurement agency for ships and services, and manager of ships and transportation systems. Cargo booking, the administration of shipping, and container and systems contracts that the command negotiates with private carriers are functions now performed by MTMC. Those functions were transferred to that command from MSC in the early 1980s.

Experience indicates that few have a clear perception of what the Defense Transportation System is or how it operates. One reason may be that it is difficult to "pin the tail" on the DTS body when the body itself is not pictured on any organizational chart and there is no head for the body. Another reason is that the transportation community, particularly the ocean transportation community, has a language of its own. Acronyms and terms with special meanings abound. It has become necessary to at least understand the rudiments of the language to be able to visualize how MILSTAMP and service policies and procedures come together to provide a systematic way of moving military cargo from supplier, vendor, depot, field, or factory to deployed U.S. forces.

It is vital that there be better understanding of the DTS. Not only logisticians and those assigned to transportation operating agencies, but commanders, staff officers, planners, and mid-level supervisors in each of the services, active duty and reservists, should know what that transportation system is capable of doing to support them and how it works.

CHAPTER 9

WORLDWIDE MSC OPERATIONS IN THE 1980s

Understanding how MSC provides the sealift capability needed for emergency expansion of the Defense Transportation System requires some familiarity with the peacetime and worldwide operations of the Navy command. Key MSC operations can be categorized by function. They include sealift of military ocean cargo; manning and operation of Naval Fleet Auxiliary Force (NFAF) ships that directly support the Navy fleet; manning and operation of ships involved in scientific support or other nontransportation-type missions; and manning and operation of ships loaded with supplies and equipment necessary to support Rapid Deployment Force troops that may be deployed by air. The latter ships generally are pre-positioned in geographical areas where emergency operations might be anticipated.

The first of the primary MSC functions—movement of ocean cargo for the Department of Defense—includes the transport of dry cargo and liquid and dry bulk cargo (figure 9-l). Most dry

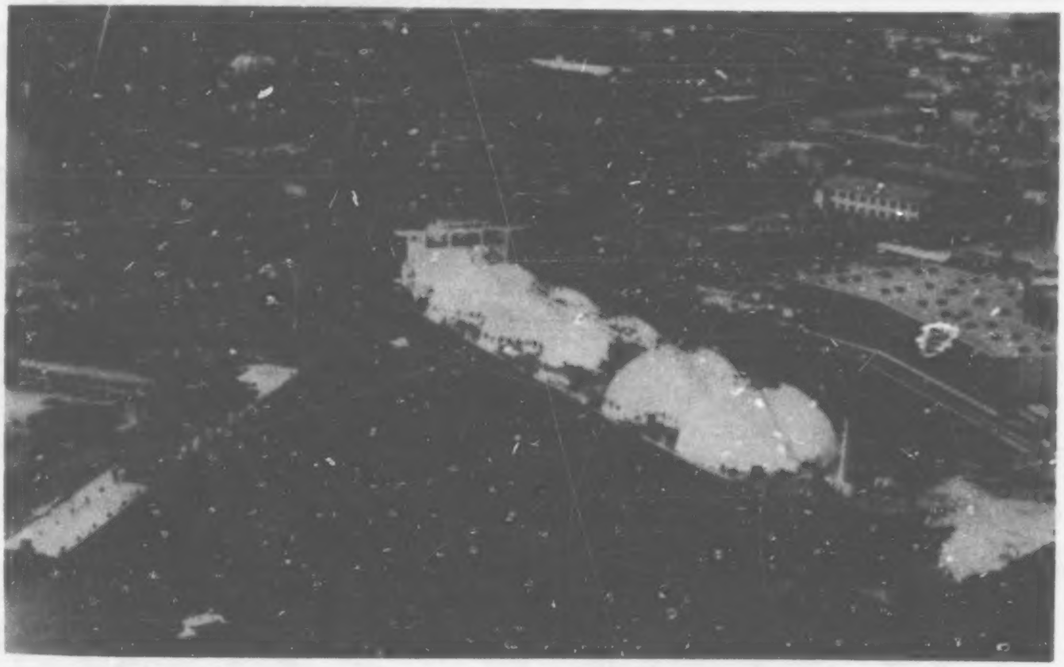


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Figure 9-1.—An MSC POL ship.

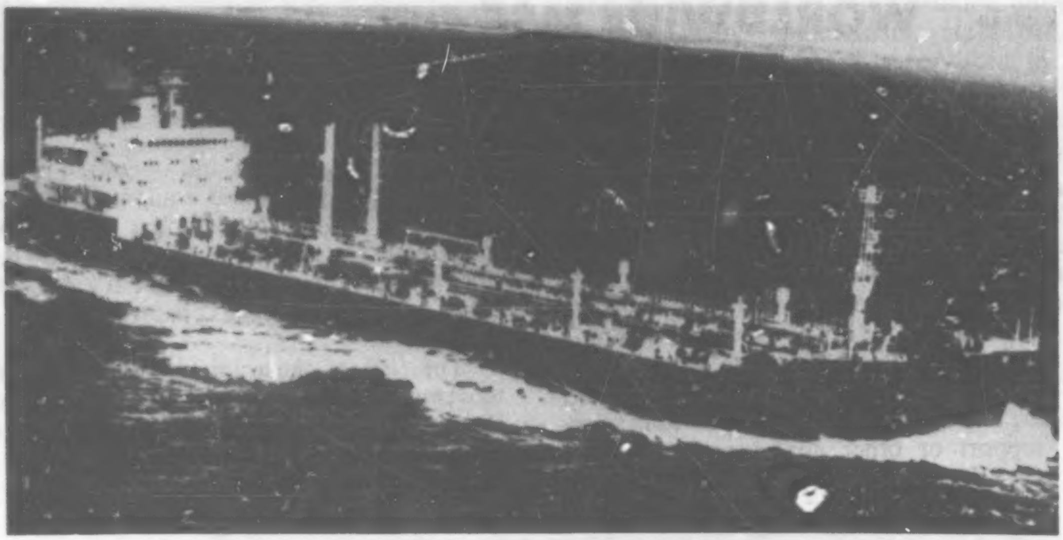

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Figure 9-2.—An MSC contracted tanker delivers crude oil to the Strategic Petroleum Reserve.

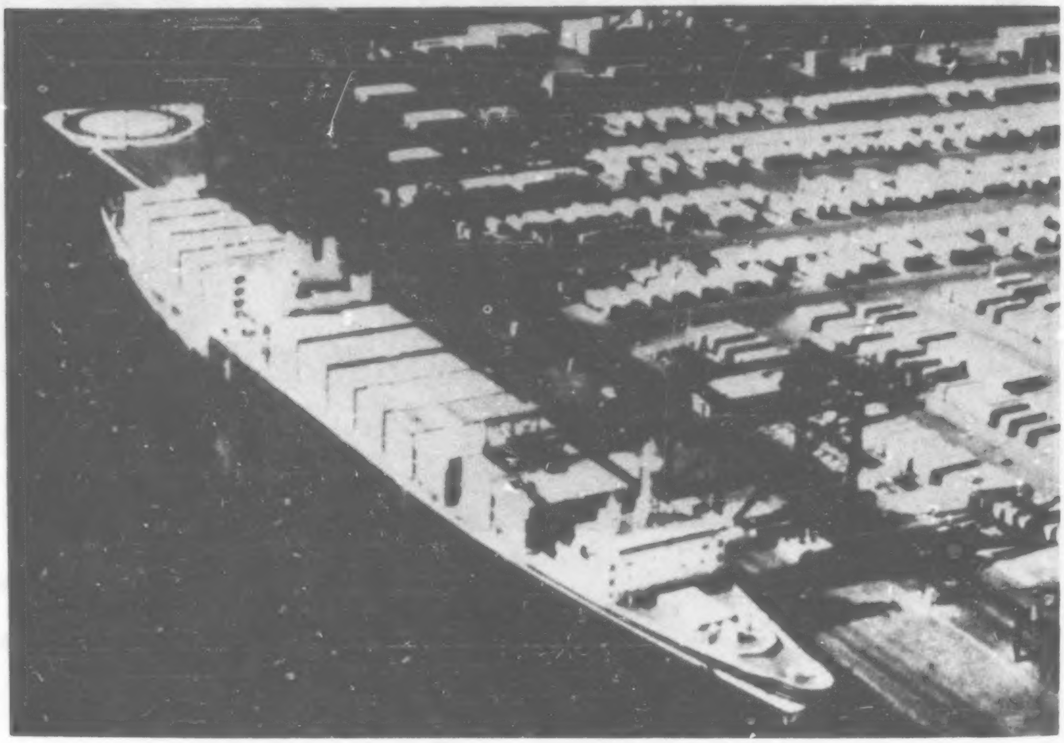

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Figure 9-3.—An intermodal ship and yard.

bulk cargo lifted by MSC Controlled Fleet ships consists of coal. Liquid bulk cargo consists primarily of refined petroleum products needed for operation of ships, aircraft, surface vehicles, heating plants, and facilities used in generating electrical energy. MSC also contracts for tankers to carry crude oil stored in the Gulf Coast salt domes as part of the Strategic Petroleum Reserve Program (figure 9-2).

As was pointed out in chapter 8, Military Sealift Command is not a Navy counterpart to a commercial shipping company, a description sometimes applied to the command in the 1950s. MSC operates merchant-type ships, but it is also a major procurement agency of the Federal Government, spending more than $1 billion annually. Much of that is for the acquisition of ships, shipping services, and transportation systems needed to fulfill a broad range of military requirements.

Peacetime operations of the sealift command in the 1980s are more extensive and complex than those initially assigned. Changes in Department of Defense contingency planning, in the Department of Defense reliance on the U.S. maritime industry for sealift augmentation, and availability of advanced maritime technology have significantly expanded MSC's original role as an operator of merchant-type ships.

The command is in fact a transportation systems manager. It is responsible for the acquisition of ships for its controlled fleet. It is responsible for acquiring shipping services and intermodal systems (figure 9-3) to meet routine and unique Department of Defense requirements, and for the management of the ships, shipping services, and systems it acquires.

Since 1972, the command has been assigned additional responsibilities for the manning and operation of Navy fleet oilers, tugs, stores ships, ammunition carriers, and other ships that directly support the combatant fleet. This role will undoubtedly continue to expand because civilian-manned ships (figure 9-4) free skilled military manpower for duty aboard combatants and because MSC operation of fleet support ships lowers Navy operating costs with little adverse impact on fleet capability.

During the late 1970s and early 1980s, the number and type of ships operated by MSC and involved in scientific support operations were reduced somewhat. Constraints on funds budgeted for oceanographic, hydrographic, ocean survey, space flight, missile testing, and other non-transportation functions tested MSC management (figure 9-5). Selecting ships for temporary or long-term layup, preservation of ships taken out of operation, modification of existing ships to meet demands of new or amended programs or to extend useful life of the ships, and other factors inherent to programs affected by the stretch-out and curtailment of budgets, created demands on MSC management that were as great as, if not greater than, those associated with growth of the scientific support ship force.

The energy crisis in the late 1970s and early 1980s also tested MSC transportation managers. Changing patterns of supply for fuel which

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Figure 9-4.—A civilian employed by MSC.

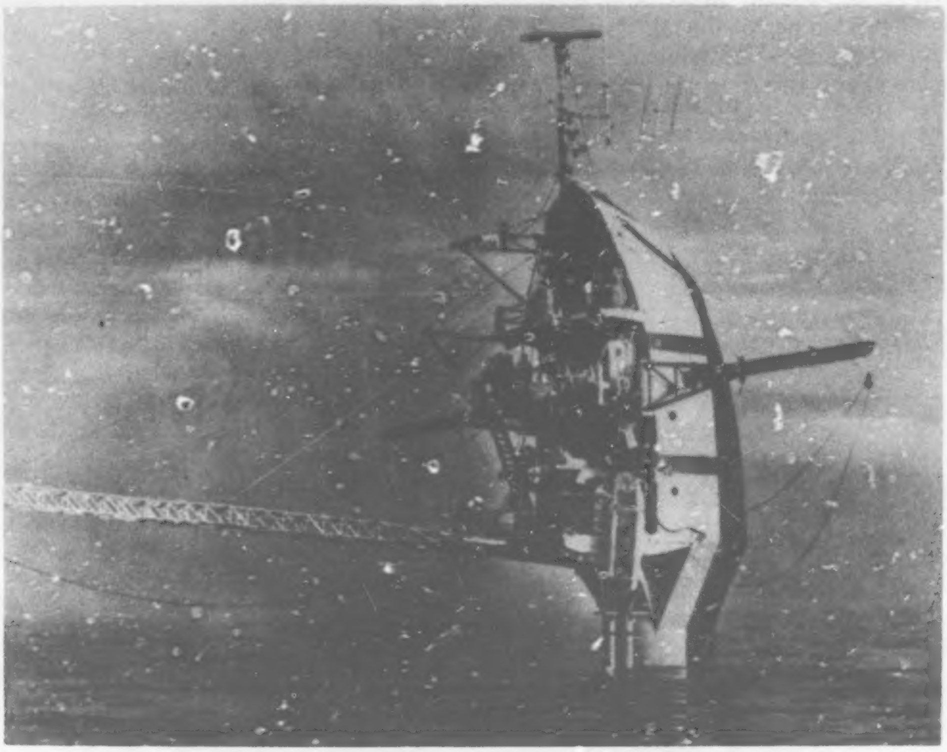

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Figure 9-5.—A floating instrument platform (FLIP) is used to take oceanographic and meteorological measurement.

significantly lengthened tanker voyages, limited availability of U.S. flag small tankers, expansion of the Strategic Petroleum Reserve Program, and political and other factors all had an impact on MSC operations. Proper sizing of the MSC Controlled Tanker Fleet, long-term actions to acquire new tankers, and assuring availability of tankers for emergency augmentation of the command required continuing analyses. The fourth area of MSC operations, manning and operation of ships (figure 9-6) loaded and pre-positioned for support of forces to be air-deployed in an emergency, poses unique challenges for MSC managers. In early 1980, the command was tasked to assemble a force of ships to be deployed in the Indian Ocean and be equipped to support a Marine Corps brigade and Air Force air strike units. By the mid-1980s, a seven-ship Near Term Pre-Positioned Force was on station near Diego Garcia. Actions were under way in JCS, DOD, and Congress which are expected, eventually, to result in fast response ships and new-design Maritime Pre-Positioning Ships being assigned to MSC.

The following functions are carried out simultaneously: movement of peacetime dry and liquid cargo, fleet and scientific support operations, manning and operation of the NTPF, and planning and working with the maritime industry to assure that sealift resources are adequate to respond to any future emergency.

Maritime technology has resulted in more productive types of ships being put into operation, but not all are suited for military duties. Sealift requirements also differ from those of the 1950s, 60s, and 70s. The war in Southeast Asia ended

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Figure 9-6.—USNS Mississinewa and USS San Diego.

but the potential for war in Southwest Asia and the Middle East markedly increased. No longer is it possible for the Department of Defense planners to focus on a short-term, localized NATO war fought with conventional weapons. That scenario for many years resulted in the emphasis being placed on the air deployment of troops and pre-positioning of their equipment. Rapidity of response, flexibility, and versatility are the watchwords of the 1980s.

Change will continue. Even though it was not clearly recognized by those concerned with sealift and sealift planning, two points of view that had been in opposition to each other for some time crossed paths in the early 1980s. Decisions needed to be made if sealift readiness were to be assured.

On one side was the notion that one should make peacetime military sealift operations as efficient, effective, and economical as possible. That view, oversimplified, was illustrated by efforts to rely even more heavily on shipping services provided by the private sector. Government operation of organic transportation assets not effectively used in peacetime was considered a waste of resources, therefore unnecessary. Better management of the cargo flow was the focus of suggested changes in the Defense Transportation System.

On the other side was the notion of "contingency orientation" where one lacks the time to build or acquire additional mobility assets in an emergency, when the military services must rely on capabilities already in existence.

That view suggests that peacetime sealift operations should produce wartime capability with peacetime productivity—a byproduct rather than the purpose of the Department of Defense Transportation System.

Keep those contrasting viewpoints in mind while you study Military Sealift Command. They provide a perspective for those who seek to analyze, understand, or support actions to improve mobility of U.S. Armed Forces by strengthening the responsiveness of the airlift-sealift ground transportation team.

This chapter deals with services provided by MSC in peacetime, and the contingency capability created by the peacetime exercise of MSC assets as well as the development of command expertise. Its focus is on the era of the 1980s.

MSC DRY CARGO OPERATIONS

As described in chapter 8, the bulk of dry cargo moving in the Defense Transportation System moves under MSC shipping and container agreements and aboard ships of the MSC Controlled Fleet. The exception is domestic dry cargo which moves primarily under GBLs and commercial tariffs. Domestic cargo is handled differently from export cargo primarily because public law prohibits the Department of Defense from obtaining special Government rates as a high volume shipper in the domestic trade. Rates on world trade routes published in MSC shipping and container agreements and rates in special contracts with carriers who provide dedicated service to or from particular destinations are secured by industry-wide, competitive, negotiated MSC procurement. (See chapter 10.)

In booking ocean cargo, a function performed by MTMC, MSC marine transportation specialists attempt to take full advantage of the MSC Controlled Fleet. Since controlled fleet operating costs continue whether ships are moving cargo or not, effective utilization of controlled fleet ships is clearly a measure of prudent management.

The MSC Controlled Fleet is used in two basic ways: (1) to provide scheduled sealift service (figure 9-7) for military customers where there is no private sector service or where such service is insufficient to meet military requirements, and (2) to provide the tramp service the military relied on so heavily during the World War II era. Tramp ships go where the cargo is generated and deliver it where needed. That type of service still is needed

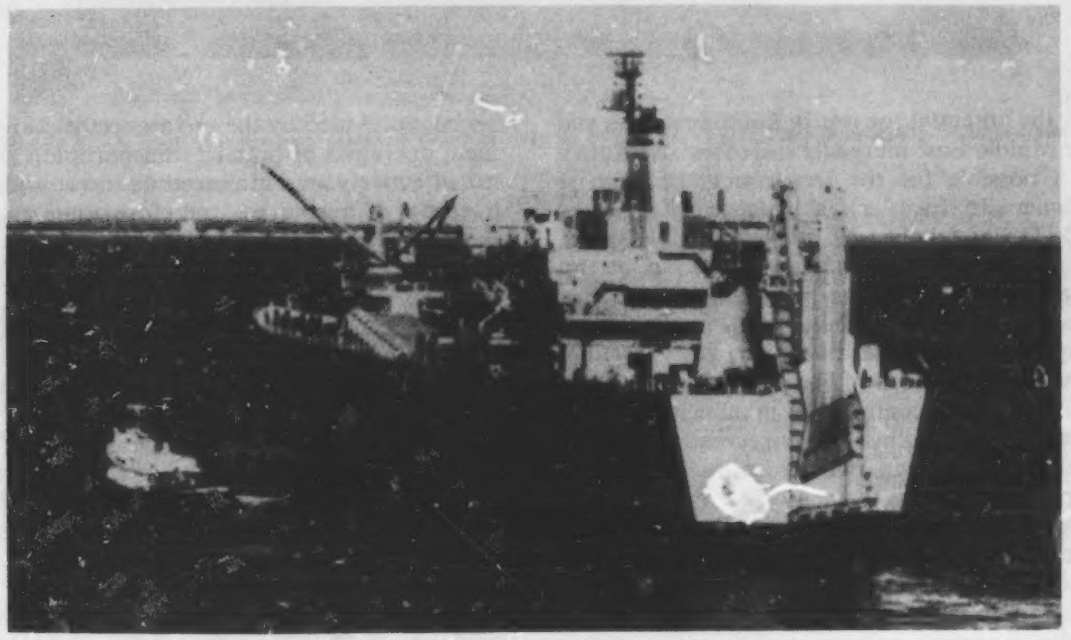

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Figure 9-7.—A departing shot of USNS Mercury getting under way during a REFORGER exercise. Not the stern ramp which facilitiates loading and unloading at almost any dock.

since the location and scope of troop deployments are products of world crises and U.S. foreign policy. Changes in the nature of requirements must be met by compensating changes in the type and frequency of sealift services.

Every effort is made to assure that MSC Controlled Fleet resources are used effectively. At the same time, MSC managers realize that maintenance of a peacetime merchant marine capable of augmenting the military sealift forces requires cargo—cargo needed to generate a profit, the lifeblood of any commercial enterprise. Laws and policies described in some detail in chapter 5 also have an impact on MSC management of controlled fleet resources.

Controlled ships are used primarily to carry full shipload lots, to move hazardous cargo (figure 9-8) that cannot be mixed with commercial cargo on scheduled liners, and to provide service where commercial service is inadequate or nonexistent. Bulky or outsize cargo, cargo that requires heavy lift ships equipped with cranes and booms necessary for loading, ammunition, military vehicles, weapons systems, and support cargo for military sites in the Arctic and Antarctic are typical examples of cargo lifted in MSC Controlled Fleet ships.

A profile of the MSC Controlled Dry Cargo Fleet helps illustrate the flexibility the fleet provides. At the beginning of the 1980s, MSC controlled more than 30 dry cargo ships—7 of them roll-on/roll-off ships. Four of those, however, were part of the Near Term Pre-Positioned Force. The controlled fleet included two dry bulk carriers, two heavy lift ships, two ice-strengthened dry cargo ships, about 20 other breakbulk carriers, and a few tug and barge combinations. The command also controlled two

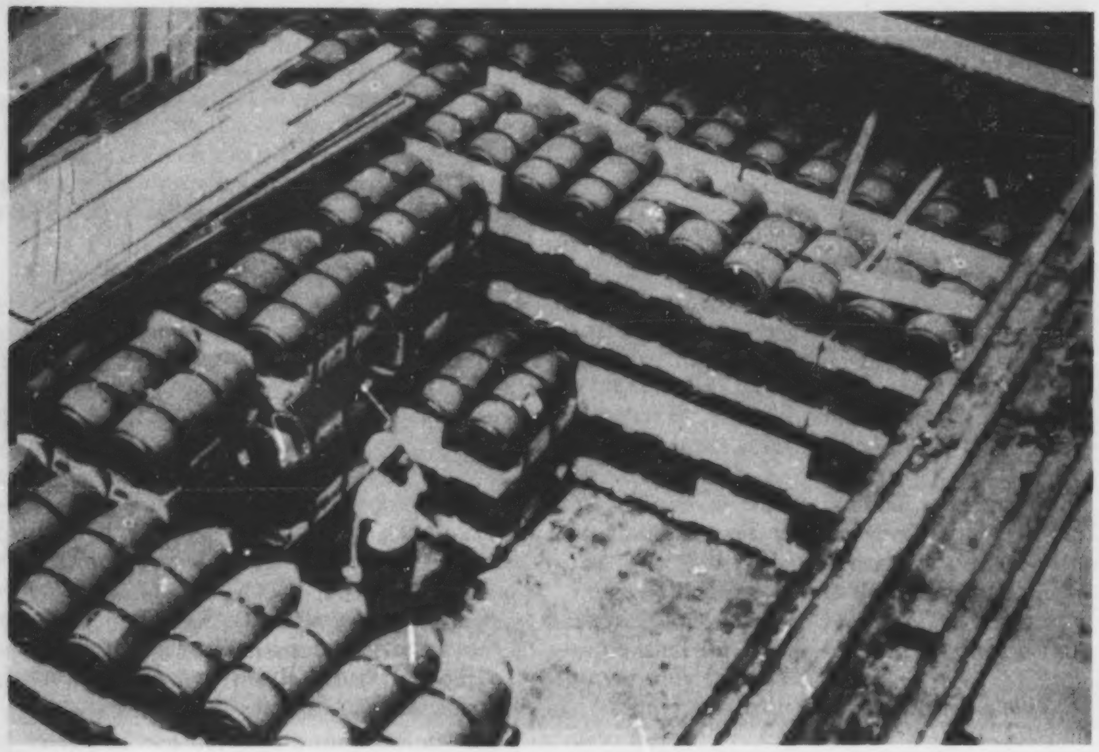

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Figure 9-8.—A movement of hazardous cargo.

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harbor tugs which supported the NTPF. While the mix of ships changes from time to time to meet projected requirements, MSC maintains approximately 30 to 35 ships in its dry cargo controlled fleet—about 30 of them chartered. Only five or six ships, all specialized carriers, are Government-owned. Ships in the controlled fleet help meet peacetime sealift requirements. They also are the rapid response force on which Defense relies for emergency sealift.

COMBINED SERVICE

At the beginning of the 1980s, six breakbulk ships in the controlled fleet, drawn from both MSC, Atlantic, and MSC, Pacific, provided scheduled service from the East and West Coasts of the United States to the Far East—with calls at a number of islands in the mid-Pacific, such as Guam and Wake Island. One Combined Service ship departed the East Coast, another the West Coast, providing service on approximately a 30-day cycle. In addition to providing service to Far East and mid-Pacific ports, Combined Service ships call at ports on the East, West, and Gulf Coasts of the United States. MSC, Pacific, is the command single manager for the Combined Service.

DEDICATED ROLL-ON/ROLL-OFF SERVICE

Dedicated service to other areas also is provided by MSC Controlled Fleet ships. This MSC Controlled Fleet of roll-on/roll-off ships delivers

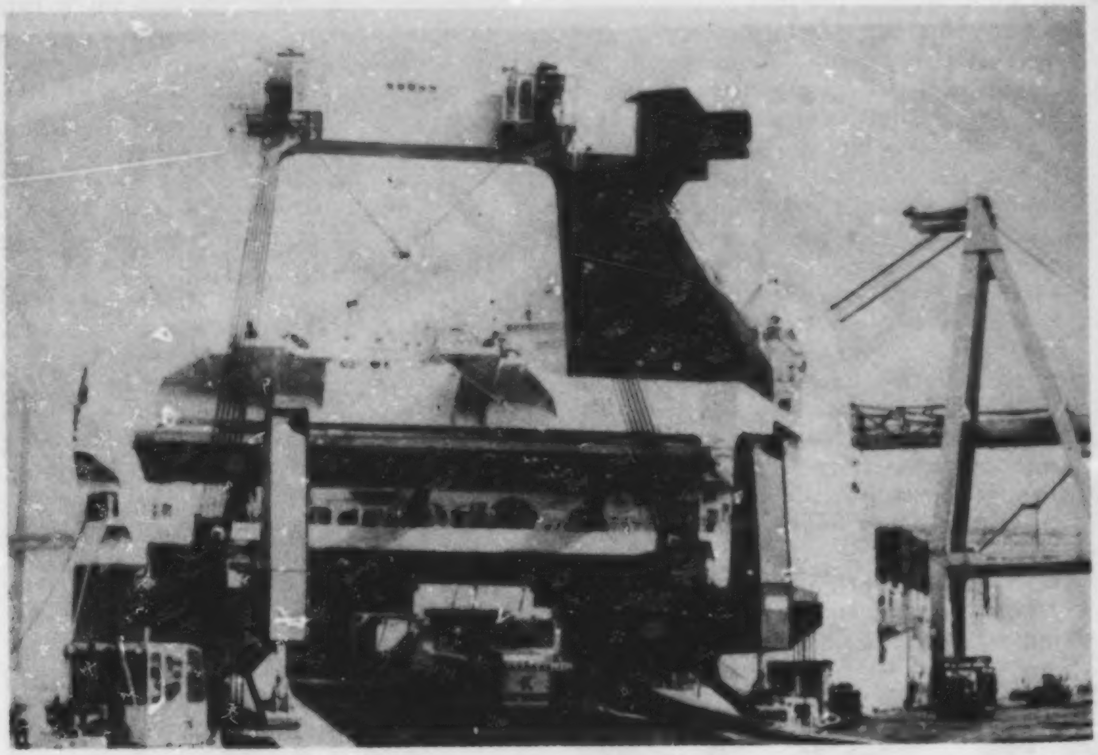

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Figure 9-9.—One of MSC's newest and most productive ships is a roll-on/roll-off vessel which loads and discharges cargo by way of a stern ramp.

tanks, trucks and other military vehicles and rolling stock (figure 9-9). Privately owned automobiles also are transported to and from Europe by *Callaghan*. Containers often are carried aboard *Callaghan* since they can be loaded by tractor-trailer and rolled off the same way at the receiving end. *Callaghan* has operated for many years on the Bayonne, N. J., to Bremerhaven, Germany, run and has become so familiar to the Army troops that some think *Callaghan* is an Army ship. Actually *Callaghan* is time-chartered and has been a part of the controlled fleet since it was built for charter in the 1960s.

A more recent addition to the list of MSC controlled roll-on/roll-off ships is MV *Cygnus* which the command chartered in the early 1980s. *Cygnus* also is used to transport vehicles, on a regular and scheduled run, between the Gulf Coast of the United States and Northern Europe. While *Cygnus* and *Callaghan* may be diverted for other uses—for example, support of annual REFORGER (reinforcement of forces in Germany) mobility exercises—they ordinarily are kept busy delivering the many vehicles and cargo needed to support military organizations.

CONTAINERIZED AMMUNITION DELIVERY SERVICE

Another dedicated service provided by MSC in the 1980s, tailored to meet user requirements for containerized delivery of ammunition, is both a long-term test and a functioning transportation system. An MSC Controlled Fleet breakbulk ship, SS *American Ranger*, has been equipped to handle military vans (figure 9-10) in holds three and four. Palletized ammunition can be carried in the ship's other four holds at the same time. Necessary alterations to the ship for use in the program were minor, consisting chiefly of cells to hold the vans in place as they do on a full-fledged container ship. Ammunition-laden containers or container types of loads are carried on deck above the holds.

American Ranger, or any ship replacing it on the scheduled run between Sunny Point, N.C., and Nordenham in Germany, helps maintain ammunition inventories and reduce pipeline costs. This is the result of ammunition being moved in vans directly from an ammunition terminal to the field organization. Largely as the result of the success of Containerized Ammunition Delivery Service (CADS), the Department of Defense is exploring other ways of transporting hazardous cargo, such as moving ammunition in container ships, including those operated by private carriers. *American Ranger* is a privately owned ship manned by a crew hired by its owners, but the ship is controlled by MSC while under command charter.

DEDICATED DOMESTIC SERVICE

Although MSC cannot negotiate special Government rates with private carriers for transport of military cargo in the domestic trade, it does award contracts for such service to private carriers. In most instances the contracts provide

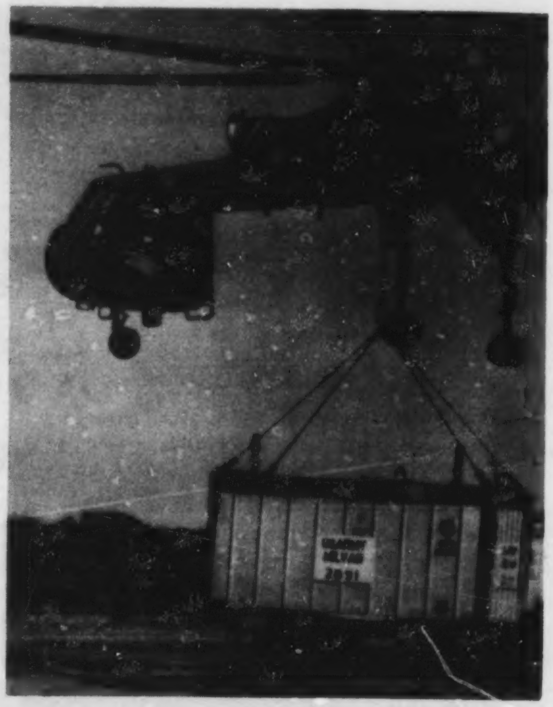

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Figure 9-10.—A military van being loaded by helicopter; however, it is usually loaded by a crane.

for rail and truck service overland as well as ocean transport. In the early 1980s, service was provided to three domestic trade areas by private carriers under special agreements with the command. One contract provided service to Adak, Alaska, and another to Guantanamo Bay, Cuba. The Navy has a long-term pact with the Cuban government for the use of Guantanamo Bay.

Other dedicated service is provided between Bermuda and the United States, and between varied Caribbean sites and the United States. Service to both Adak and Guantanamo Bay is essentially by tug and barge. Unlike the barges one associates with river traffic, ocean-going barges can be as large as a ship—minus a propulsion plant—or of a special configuration.

Barges serving Guantanamo Bay, for example, have been triple deckers able to carry breakbulk cargo, containers, heavy or outsize cargo, vehicles, dry or liquid bulk in some form of container, or almost any other type of cargo (figure 9-11). Versatility is a hallmark of tug and barge services provided by the command.

Two tugs and barges from the MSC Controlled Fleet provide unique services to stations downrange from the Air Force Missile Test Center on the East Coast of Florida. Customers at downrange sites are primarily Navy and Air Force units, although NASA cargo is sometimes carried. Services by tug and barges and a small general cargo ship originate at Fort Canaveral in Florida, where MSC has an office. Cargo generally arrives there by truck for shipboard loading, although it can be shipped overland by rail. Types of cargo carried are varied, including liquid and dry bulk as well as general cargo, supplies, equipment, and electronic gear.

Cargo delivered to Guantanamo Bay is handled differently. It flows through an intermodal system that provides supply-point-to-user service.

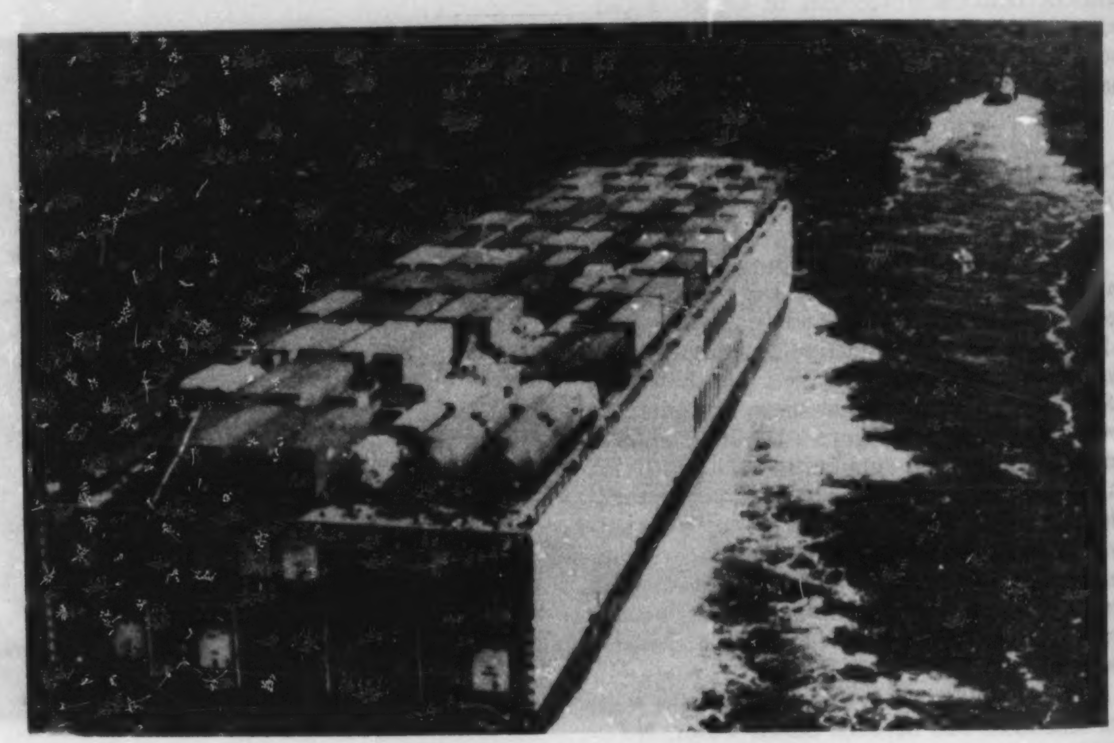

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Figure 9-11.—An MSC triple-decker barge.

A typical round trip begins with the last trailer load of cargo delivered from the Naval Supply Center, Norfolk, to the rail yard on a Monday. The train, loaded with containers, vehicles, foodstuff, varied types of equipment and supplies, arrives in Jacksonville, Florida, by 9 a.m. on Wednesday.

The cargo is transferred from rail yard to a triple-decker barge. Pushed or pulled by a high-powered tug, the barge is well at sea by Wednesday afternoon. By the following Monday, the tug and barge combination has reached Puerto Rico, taken aboard additional cargo or discharged other cargo, and is again at sea. By Wednesday, discharge operations are under way at Guantanamo Bay, and by Sunday the tug and barge combination has returned to Jacksonville. Cargo brought back on the return voyage is soon on its way by rail to Norfolk or other destinations by both rail and truck. A new delivery cycle then begins. MSC, Atlantic, manages Guantanamo, Puerto Rico, and Bermuda services.

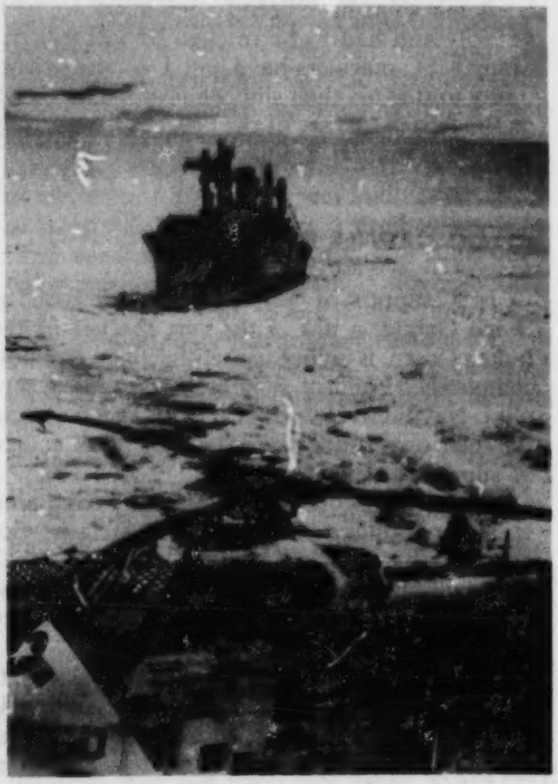
The intermodal service provided the Navy by MSC through a contract with a private carrier is typical in that it provides through service with a single billing to the customer. It is atypical, however, in that all MSC contracts are tailored to meet user needs rather than requiring the "customer" to select from a limited and specific range of transportation service options.

ARCTIC, ANTARCTIC OPERATIONS

MSC delivers cargo annually to customers in both the Arctic and Antarctic. These deliveries are unscheduled in that they take place when ice and weather conditions allow.

As pointed out in chapter 7, Cool Barge is a name long associated with MSC history. Supply of military and other Federal agency sites in Alaska is provided by an MSC contractor. Cool Barge contracts provide for ocean lift of varied types of cargo to Alaskan waters and discharge of that cargo. Often, tug and barge crews are required to blaze a trail or to use a helicopter to position cargo at remote sites. Contractor employees operate small lighters and watercraft used in putting cargo ashore and perform a variety of functions inherent to the tough task of Arctic supply. The trucks, tractors, and lighters they use are carried on the barges. While ingenuity, creativity, and resourcefulness are not specifically called for in the agreement MSC negotiates, the contracts contain incentives that encourage such qualities. The tasks performed generally demand such qualities.

Cool Barge operations and MSC-provided support of military and nonmilitary operations in the Antarctica are managed by MSC, Pacific (figure 9-12). Those operations are collectively labeled "Deep Freeze." The operations have long been associated with Military Sealift Command. Deep Freeze differs from Cool Barge operations in that breakbulk dry cargo ships and command controlled tankers make a number of voyages to the Antarctica during the summer season to deliver the supplies, equipment, food, and fuel



30.206

Figure 9-12.—USNS Greenville Victory in the Artarctica.

to military personnel and civilian technicians wintering there. MSC uses ice-strengthened dry cargo ships and tankers from its Nucleus Fleet for Deep Freeze operations.

Ice-strengthened tankers and dry cargo ships, usually Government-owned, also are used for Arctic East operations managed by MSC, Atlantic. Arctic East is the name of annual resupply of the Air Force base at Thule, Greenland, and other regional sites. In both Arctic East and Deep Freeze operations, MSC civil service crews are called upon to navigate their ships through ice-strewn, cold, and dangerous waters. Often they are preceded by Coast Guard icebreakers which clear a narrow channel for oceangoing ships to follow as they move in and out of Arctic and Antarctic ports. Even the piers where the ships tie up are made of ice. Despite the dangers involved, and although some ships have been damaged (even holed by the treacherous ice), no MSC ship has been lost in such operations.

A few ships have been frozen in the ice temporarily and had to be rescued by icebreakers. Many MSC mariners have had a unique opportunity to step off their ship while at sea and walk on the frozen surface of the ocean. Occasionally they get a look at a polar bear.

DIEGO GARCIA SUPPORT

MSC support of Navy organizations based at Diego Garcia, a dot in the vast reaches of the Indian Ocean, is unique in that the island is almost completely dependent on airlift and sealift for supplies. Navy fleet ships that rely on Diego Garcia for their own support are the only other source of supply for "islanders."

Because its requirements are small compared to larger military bases, Diego Garcia service provided by MSC is less frequent. An MSC breakbulk ship equipped to carry containers, some of which are refrigerated, calls at the island every few months.

Cargo space in a breakbulk cargo ship MSC uses, generally of post-World War II vintage, is sufficient to handle the wide range of items, supplies, and equipment needed to sustain fleet operations and support the Navy population on the island—as well as the civilian mariners who man MSC's Near Term Pre-Positioned ships based in the area. Most of the fuel needed by the Navy task force in the Indian Ocean is delivered right to fleet oilers at sea by MSC Controlled Fleet tankers.

OTHER SPECIAL CARGOES

MSC does not dedicate controlled fleet ships for the lift of ammunition other than for the CADS program. Ammunition ships are loaded at only three ports in the continental United States. Terminals are located at Earle, N.J., Concord, Calif., and Sunny Point, N.C. Although ammunition was lifted in chartered ships or ships taken out of the National Defense Reserve Fleet and operated by private contractors for MSC during the war in Southeast Asia, peacetime ammunition requirements are fulfilled primarily by breakbulk ships of the MSC Controlled Fleet. MSC's booking of ammunition on its controlled fleet ships is primarily the result of constraints on the handling of hazardous cargo; for example, safety requirements, customs regulations, and ship insurance costs.

Since ship holds are required to be "sheathed," that is, to have wooden, protective barriers or structures installed inside the hull, breakbulk ships often carry ammunition on several consecutive voyages. Ammunition and other types of cargo are not mixed, again by law and regulation, except that small lots of ammunition can be carried on deck in special cribs or containers with other cargo carried in ship holds.

Since peacetime ammunition delivery requirements generally can be validly projected, MSC is able to take maximum advantage of its controlled fleet assets without significant impact on other types of lifts. In an emergency, however, ammunition delivery requirements would expand rapidly and substantial augmentation of the controlled fleet would be required quickly.

DRY BULK CARGO DELIVERIES

Military requirements in the 1980s for delivery of dry bulk cargo are limited, consisting primarily of lifts of coal from the continental United States to Europe.

ISC normally has two or three dry bulk
ers under time charter. Coal is loaded in
delphia and Norfolk, since it is mined on the
Coast. It is delivered to Rotterdam and
terdam.

rom those Dutch ports, coal destined for
forces in Europe is loaded aboard hopper
cars for delivery to military bases, posts, or
installations. It may seem that sealift of U.S.
to Europe is somewhat comparable to car-
coals to Newcastle. The truth is that demand
oal resulting from increased prices for crude
as made it economical to ship U.S. coal to
ope where supplies are shorter and demand
ter. The higher quality of U.S. coal also is
ctor.

t is interesting that the two or three ships the
mand generally charters represent a signifi-
portion of all U.S. flag dry bulk carriers.
r than 20 were being operated at the begin-
of the 1980s. High volume U.S. demands for
egic minerals and other dry bulk commodities
delivered by foreign flag dry bulk carriers.
vever, many of the foreign flag bulkers are
ct owned by U.S. interests.

IER SHIPPING SERVICES

An illustration of MSC capability to meet
ue needs is its charter of a small ferry boat
rovide service between Naples, Italy, and
linia. It carries a variety of cargo, including
ole, containers, vehicles, and parts. The ferry
reign flag, limited in capability, but it meets
ecific local requirement generated by U.S.
ed Forces stationed in the area.

The use of its own controlled fleet, negotia-
of shipping and container agreements to pro-
a vast range of intermodal and traditional
n transportation services, special contracts
carriers for unique or dedicated service to
t a military requirement, and the use of the
id Response Force or other NDRF ships are
avenues open to MSC in resolving ocean
sportation problems—local, regional, or
ldwide—of the Department of Defense and
r organizations the command supports.
cetime lift capability and the pre-positioned
liness ships form the foundation on which
rgency expansion in the 1980s would be
ctured.

MSC Van Program

The van program allows MSC customers to reap advantages of containerized delivery—typically less damage, reduced handling, and cheaper cost.

As noted in chapter 8, MSC has borrowed more than 600 dry cargo vans from the Army and has leased nearly 100 more refrigerated vans. In some cases, when requirements peak, MSC leases additional vans. All are 20-footers, the type generally referred to as MILVANs. The small vans are preferred by many shippers since they can be fully packed with general cargo, meaning better use of space. They also are easier to handle, especially so in loading aboard a ship, in discharging from a ship to a pier, or while being moved overland to the consignee.

MSC cannot conveniently handle larger vans aboard its controlled fleet ships. With rare exceptions, the MSC vans are moved aboard those ships (figure 9-13). MSC, Pacific, manages the program, determining service requirements, procuring the vans, maintaining them, and managing their use. Shippers needing van service ask MSC, Pacific, to provide MILVANs, most of which are stuffed in or near military terminals or outports. When there is a need to move an MSC van inland to a depot, CCP, or some other point, the shipper arranges such movement and pays for it. Overseas, inland movement of MSC vans is handled by the military customer.

Shippers using MILVANs benefit in other ways since van and stuffing costs are included in the ocean billing rates MSC publishes. MSC retains custody of the MILVANs and is responsible for their return to pool areas.

As indicated by MSC's designating MSC, Pacific, to manage the MSC van program, demand is greatest in the Pacific, Far East, and Indian Ocean areas where adequate commercial service is not available. The van program meets specific needs of military units in those areas. Typical are Navy units at Diego Garcia which depend on MSC for logistics support—except for high priority items delivered by air. Vans reduce handling cost and time, spot cargo at the very door of the user, and offer maximum protection for cargo as it moves through a very long supply line.

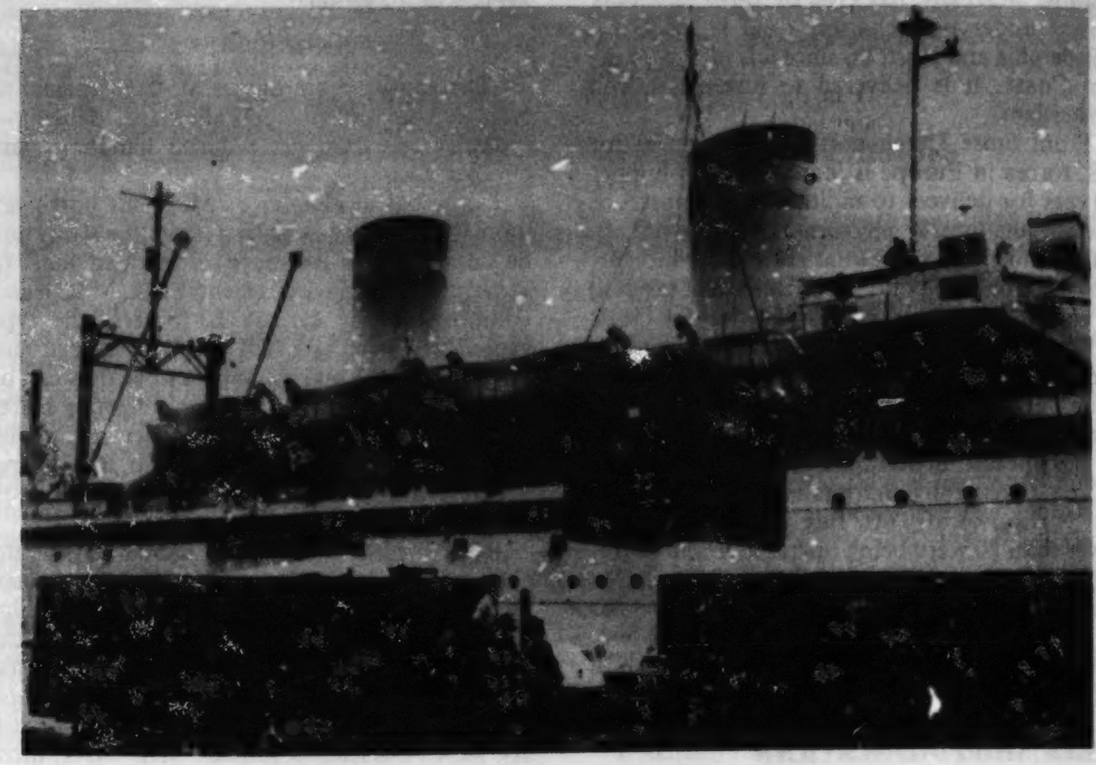


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Figure 9-13.—Loading of U.S. Army containers aboard an MSC ship.

Success of the MSC van program does not justify MSC expansion of container service by the use of controlled fleet ships. The service provided is neither as rapid nor as cost effective as commercial container ship service. That is true because MILVANs are moved in breakbulk ships adapted for stowing containers. Vans are loaded on and off the ship by the shipboard cranes, cranes which could not handle larger, fully loaded boxes. Standard military trucks or tractors move the containers overland because no container yards are available to marshall and handle the MSC vans.

But the program is more than an expedient. It is designed to fill needs of a particular group of customers. Use of the 20-foot military vans runs counter to industry trends toward larger boxes, typically 35- or 40-footers. MSC Controlled Fleet movement of military vans simply is not competitive with commercially provided service. Despite these facts, it is likely that MSC will continue to provide specialized van service in the Pacific-Far East-Indian Ocean areas. Requirements for such service will continue to expand, especially so if military commitments to those areas increase as the result of volatile situations that threaten world peace.

PASSENGER MOVEMENTS

MSC Controlled Fleet ships no longer carry passengers—troops or dependents—except for military personnel who may accompany equipment to assure that is it maintained. Such passengers are known as supercargo and are booked aboard controlled fleet or chartered ships by MSC area commands.

However, some military personnel and their dependents do travel by sea (figure 9-14)—even though military airlift is most frequently used. These travelers number in the hundreds rather than the hundreds of thousands yearly and involve people who for one reason or another are not able to travel by air. No U.S. carriers operate passenger ships and have not since the late 1970s. Therefore, MSC books passengers who must travel by ship aboard foreign flag carriers.

TANKER OPERATIONS

The size of the MSC Tanker Fleet probably varies more than any other segment of the controlled fleet, primarily because tankers often are chartered to meet short-term requirements. Dry cargo ship charters tend to be for longer terms, for several years at a time, while tankers are chartered for a single voyage or series of voyages as well as for specific periods of time. MSC sizes its controlled tanker fleet to meet approximately 90 percent of projected military requirements. The other 10 percent is fulfilled by charter of commercial tankers as needed.

30.208

Figure 9-14.—The movement of U.S. troops on an MSC ship.

In the early 1980s, MSC had 23 tankers in its nucleus fleet (figure 9-15); five were small T-1 tankers of World War II design. Two of the five had been in the NDRF but were taken out to meet demands for fuel transport and to replace older T-1s. Other nucleus fleet tankers included 18 operated by civilian contractors for MSC, most of which were bareboat chartered for long terms. All are so-called "handy size" ships able to get into ports with limited water depths and with limited storage facilities for fuel.

MSC considers 25,000 deadweight ton tankers to be "handy sized." But it also can use 50,000-ton ships. Tankers 100,000 tons and up have little value for military lift of fuel in normal situations. In the early 1980s, the chartered portion of the tanker controlled fleet ranged from 10 to 20 ships—the number depending on fluctuations in short-term requirements. Supply and distribution patterns affect MSC tanker requirements.

As outlined in the previous chapter, requirements for the transport of Department of Defense fuel are received at MSC headquarters. Ships are allocated by the tanker division to match requirements. The utilization of the entire tanker force is managed and evaluated from headquarters. Management problems occur mainly when requirements are revised because suppliers often are unwilling to make firm commitments to the Defense Fuels Supply Center far in advance. That unwillingness is a product of trends in the industry which are reflected by price changes, supply shortages, or surpluses.

A primary difference between nucleus fleet dry cargo and tanker operations is that a limited number of MSC tankers are civil service manned. Most nucleus fleet tankers are manned and operated by MSC contractors. Other chartered controlled fleet tankers are manned and operated by civilian crews provided by unions but employed by shipowners.

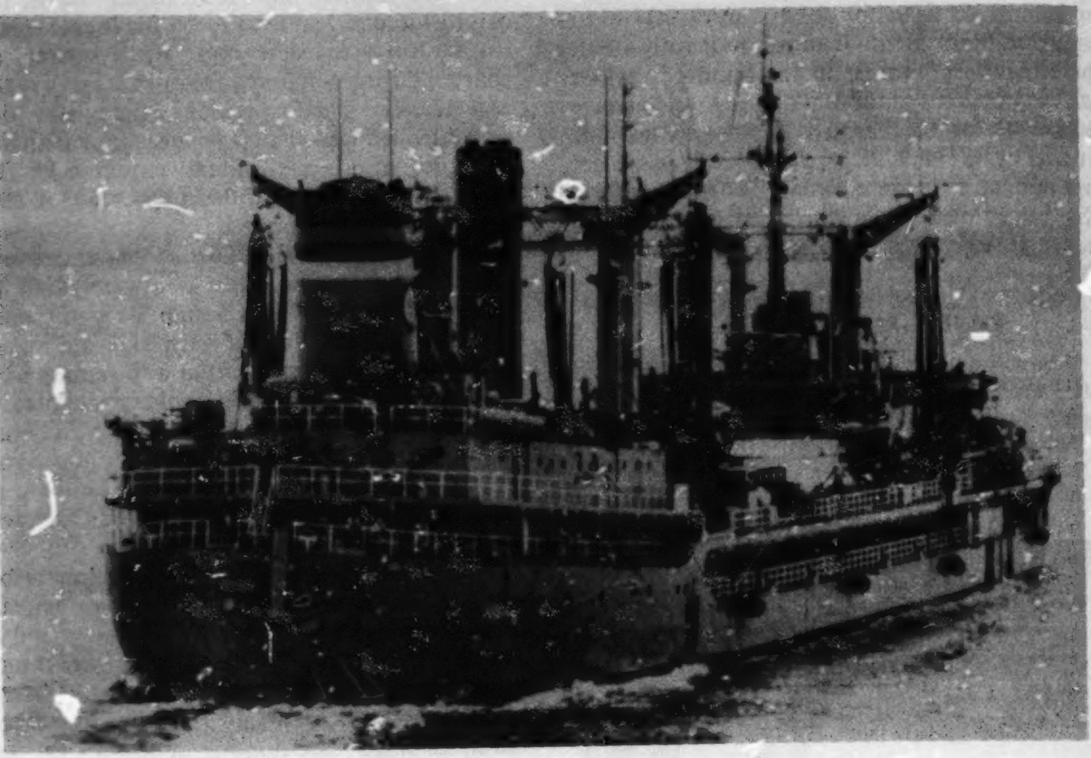

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Figure 9-15.—The tanker USNS Mispillion, an MSC assigned and operated Navy oiler.

Training of MSC controlled tanker crews (figure 9-16) presents challenges not only because crew turnovers are frequent but because civilians aboard MSC tankers often make underway replenishments with Navy fleet ships. Replenishment can be made over-the-stern with a tanker dragging a hose to be picked up by the "customer," or alongside. In the latter method, receiving ships pass hoses between stations while ships steam alongside. Many MSC controlled tankers are equipped for astern and alongside refueling. They carry out refueling exercises with fleet ships—and in some case ships of Allied navies—on an opportune basis as a realistic means of developing expertise they may need in a future emergency.

Three MSC controlled tankers provided underway support to Navy task forces in the Indian Ocean in the early 1980s. One ship remained on station with fleet units while others were en route to or from supply pickup points. All of the MSC tankers delivered fuel to task force fleet oilers—by the alongside, underway method. Oilers then refueled fleet units as necessary. Many of the fleet oilers themselves are MSC manned and operated, part of the Naval Fleet Auxiliary Force the command operates.

Communications is essential for worldwide control of a force of more than 50 MSC controlled tankers, especially so during periods when shifts in sources of supply require ship reroutings. MSC has met such challenges by equipping its controlled fleet tankers with Maritime Satellite (MARISAT) systems. With MARISAT, masters can communicate directly with MSC headquarters, or headquarters with the ships, in minutes. The result is greater operational effectiveness, and in many instances forestalling high

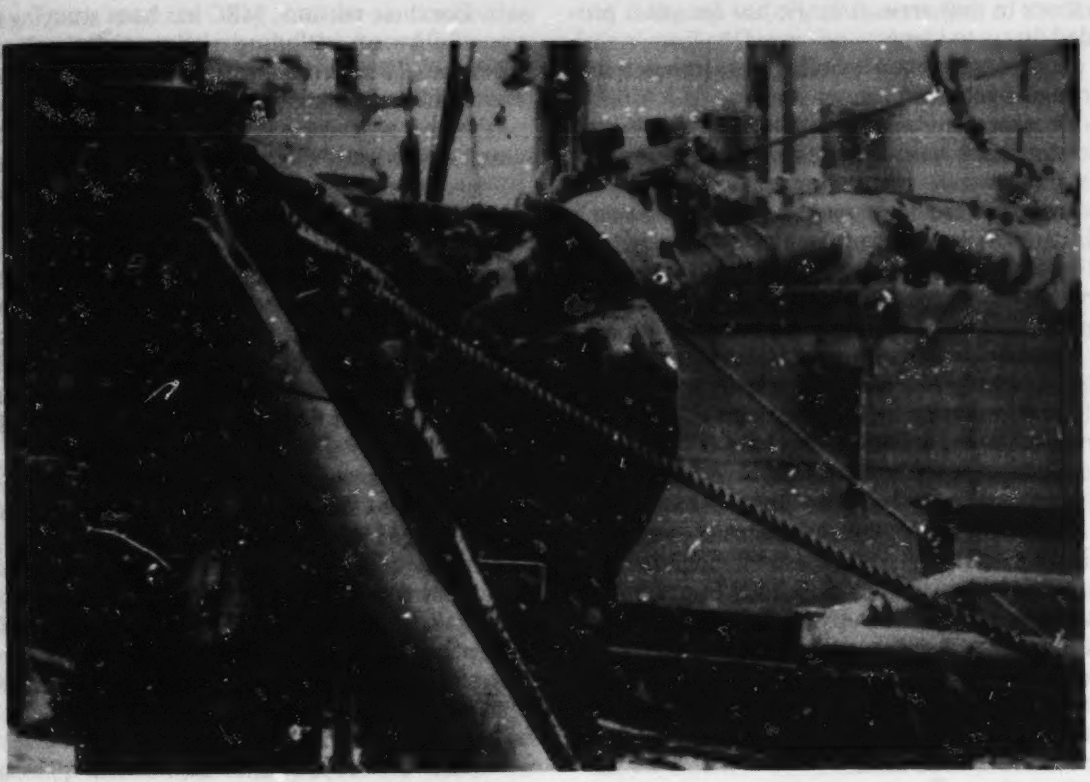

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Figure 9-16.—Training aboard an MSC tanker while at sea.

costs that would have been incurred by a delayed response to a changing requirement.

Although Indian Ocean support operations by MSC tankers are not literally scheduled services, they can be described as "dedicated." The same description applies to service provided by three T-1 World War II-type tankers and a more modern *Sealift* class of ship—all from the MSC Controlled Fleet. Two of the small T-1s are assigned to MSC, Far East. They shuttle fuel in-theater, including lifts to Japan, Korea, and other sites. Another T-1 shuttle is controlled by the MSC office, Honolulu. It supports regional requirements for shuttle service in the mid-Pacific area. The fourth shuttle ship is a *Sealift* class of tanker assigned to MSC, Mediterranean. However, unlike the T-1s which stay in-theater, Mediterranean shuttle service tasks are rotated among the nine *Sealift* class of tankers MSC controls.

As surely as the swallows return to Capistrano each year, MSC ice-strengthened tankers return to the Arctic and Antarctic to supply both military and Federal agency sites with fuel. Arctic requirements are fulfilled as part of MSC, Atlantic-managed Arctic East supply operations. Generally, both of the MSC ice-strengthened tankers are used. Each normally makes two voyages in the short summer season. A prime customer is the Air Force, which has a large base at Thule, Greenland. In the Antarctica, fuel demands are less and a single tanker can fulfill them in just one voyage.

Tanker crews visiting Thule as part of Arctic East operations face great challenges since MSC, Atlantic, is responsible for maintenance of the underwater lines that transport fuel from ship to shore in that area. Atlantic has for years provided divers to inspect and repair the lines, a task as dangerous as that of piloting a cargo-laden ship through uncharted ice.

Because MSC requirements to supply Arctic and Antarctic bases have been successfully fulfilled for many years, it is relatively easy to allocate ships and to map plans for the next year's effort. Delivery has to take place when ice conditions allow. The cargo is generally the same types, and even the cold, ice, and bad weather are predictable.

Worldwide operations are less routine for MSC tanker operations specialists. For example, before the energy crisis in the late 1970s and early 1980s, the products destined for Far East and Pacific Ocean sites were most likely picked up at refineries in Guam or other regional facility. Products needed by forces in Europe might be loaded in Greece, those for the U.S. Gulf Coast or the Northeast would be loaded in the Virgin Islands, or picked up from Gulf Coast refineries. During crises, however, it was often necessary to load products at refineries in Greece and deliver them to the Far East or other distant points. Tankers made longer voyages and ship scheduling flexibility was limited.

This change in patterns of supply—with firm commitments often made by suppliers at almost the last minute—increased the need for tankers. But industry had similar problems and the tanker supply was limited. When the small tankers MSC needed were available, the command paid a premium rate for their service. Often U.S. flag ships were not available and it was necessary for the command to charter foreign flag tankers. In 1980, for example, substantially more than half of the spot charters were foreign flag ships.

Fortunately that situation was temporary. It did, however, illustrate that in an emergency, particularly in a situation in which political realities affect the availability of crude oil or refined products, there may be severe problems in assuring the availability of the number and types of tankers needed. It is probable that the U.S. military forces have to depend heavily on foreign flag ships for delivery of petroleum products. That reality dramatizes the importance of the various tanker augmentation plans, the NDRF, and other programs described in the final chapter of this manual.

For these reasons, MSC has been studying the possibility of including tankers in the Rapid Response Force (RRF) portion of the NDRF.

Tankers are specialized ships, designed and equipped to deliver petroleum products. MSC tankers generally carry several products at a time, products that must be segregated from one another.

Land-based jet aircraft generally use a fuel known as jet petroleum (JP-4) while ship-based jets use JP-5. Ships themselves use a fuel described as Diesel Fuel Marine (DFM), except for old steam turbine-driven ships which require Navy Special Fuel (NSF) for their boilers. Boilers used ashore, such as those for heating plants, burn Low Sulfur Fuel (LSF).

Other popular fuels delivered by MSC include MOGAS and DF-2, both used to power vehicles. JP-7 is burned in aircraft which fly at high altitudes, and JP-8 is a substitute for JP-4. Even lubricating oil is sometimes delivered by tanker. Special blends of gasoline are needed for propeller-driven aircraft. That, too, is delivered by MSC tankers as are a number of other special blends designed to meet unique requirements of the military services.

Just as leaded and nonleaded gasoline, alcohol, and diesel fuel, or other types of fuel which can be used to power our own cars do not mix well, varied types of fuel cannot be lifted by tankers without cleaning huge ship tanks of the previously lifted fuel. That takes time. Environmental standards also must be met. That obviously complicates responsibilities of those allocating tankers against lift requirements. It creates other problems as well, notably those relating to quality control of products delivered by tanker. Mixed fuels, or water in any fuel, can have serious consequences and affect reliability and performance of ships, aircraft, or vehicles.

MSC tankers generally carry so-called "clean products" rather than providing "black service"; for example, the carriage of crude oil. Even so, tanks must be checked to assure that they are free of rust, sediment, and sludge. Tanks are washed out and cargo pipelines and vent lines are flushed. Assuring that tanks are gas free is vital to the safety of ship and crews. Safety is a never-ending matter of concern for tanker crews since the products they carry are highly flammable, explosive, or both.

There may or may not be a connection between that sensitivity and the record of tanker crewmen in rescue and other humanitarian efforts at sea. While other ships have sailed past refugees, the masters and owners apparently less concerned about their plight than delays and dangers that might be associated with a rescue attempt, MSC tankers repeatedly have taken aboard refugees and delivered them to port. Tanker crewmen have given generously of their own food, clothing, and money to assist the refugees. And there have been numerous instances when professional seamen risked their own lives to battle a storm, fire, or other disaster at sea, simply to help their fellow man.

MSC tankers also have been called on to deliver water to areas where supplies were short or temporarily disrupted.

Over the years, with energy sources plentiful and with ships readily available to deliver crude oil or refined products, too little attention was given the role tankers play in supplying U.S. military forces. It is axiomatic that an Army—or an Air Force, Navy, or Marine Corps—does not travel on its stomach. Without fuel, wheels, and tracks, jet engines and ship propulsion plants grind to a halt. Tankers are important to strategic mobility.

They are important in a way that many do not realize since water in great quantity is essential to U.S. fighting forces. Areas where military forces might be deployed are frequently areas where water is a critically short commodity—a situation that can be remedied only by delivering water where and when needed. That fact is demonstrated by the Near Term Pre-Positioned Force (NTPF) in the Indian Ocean. Tankers assigned to the NTPF carry both petroleum products and water needed to support operations of Rapid Deployment Force troops.

NEAR TERM PRE-POSITIONED FORCE

An excellent example of MSC capability to respond to Department of Defense needs was the establishment and deployment of a seven-ship Near Term Pre-Positioned Force in the Indian Ocean in mid-1980. Requirements for an NTPF were generated by JCS, DOD, and CNO as part of followup actions to the creation of the Rapid Deployment Force—embarked troops that can be deployed rapidly to carry out U.S. policy and fulfill U.S. objectives.

To support the RDF, requirements were established by the JCS for Maritime Pre-Positioning Ships (MPS). Initial reports to Congress centered on 14 ships of a new design to be adapted from a Maritime Administration design for a multipurpose ship—one that could be converted quickly from commercial to military use. Money was requested and actions initiated to design and acquire ships, built specifically for pre-positioning, with equipment needed to support RDF forces. In subsequent discussions, numbers of MSC ships were amended several times and consideration given to the use of modern roll-on/roll-off ships and barge carriers, such as *Seabee*, for use as pre-positioned ships.

Congress also approved money for acquisition of several SL-7 (figure 9-17) container ships taken out of commercial trade because of their high fuel consumption. The plan was to acquire the ships, to convert them to a roll-on/roll-off mode—or a modification of that—and to anchor them in selected areas near troops they would support in an emergency. They would be manned by small crews and would be put into operation within 5 days in an emergency, a goal which led to their designation as "fast response" ships. Six ships were acquired in 1981 with two more expected to be added to the MSC fleet.

As an interim measure, in early 1980, MSC was tasked to establish a Near Term Pre-Positioned Force—ships to be pre-positioned in the Indian Ocean with supplies and equipment, including fuel and water, to support initial operations by a 12,000 Marine Corps force and several Air Force strike units.

Two *Maine*-class roll-on/roll-off ships were chartered and another Government-owned roll-on/roll-off was assigned to the NTPF, as were two chartered breakbulk ships. A tanker was chartered to carry water for support of the RDF and a bareboat chartered tanker from the MSC Controlled Fleet was assigned to the NTPF to carry needed fuel. While the names of the ships, especially the tankers, change from time to time as MSC replaces them with others, the NTPF will remain on station as long as needed to support U.S. policy.

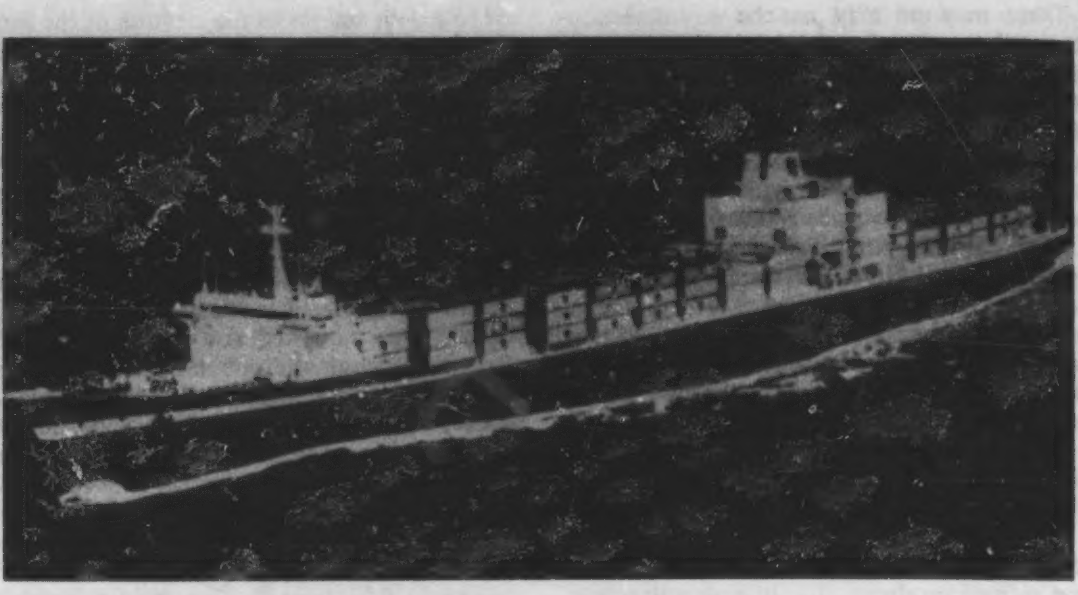

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Figure 9-17.—An SL-7 container ship.

The NTPF ships carry ammunition, including Air Force bombs, vehicles, light artillery, and everything else needed by a Marine Corps assault force. Equipment and supplies would be landed near the air deployment site of RDF troops who would pick up the equipment needed to supplement the light arms they would carry with them. To assure that the equipment is maintained in working order, it is unloaded from the NTPF ships from time to time for checks and maintenance.

NAVAL FLEET AUXILIARY FORCE (NFAF)

MSC controlled tankers have long replenished fleet ships at sea. But, with the assignment of the former Navy-manned oiler USS *Taluga* to the command in 1972, command involvement in direct support of the Navy combatant fleet began to enlarge. The primary reasons were that the use of civil service mariners and civilian employees of the MSC and the Navy allows assignment of military men with highly technical skills to more sophisticated fleet ships. Overall cost to the Navy of civilian manning is lower since MSC civilian-manned ships have smaller crews and remain on station indefinitely while Navy crewmem rotate on schedule, and also because port time is reduced while ship operating tempo increases.

The latter characteristic of MSC manned ships is the result of manning by professional mariners who perform tasks associated with a career they have chosen voluntarily. Less time must be made available for training, rest, and recreation. The ashore support structure needed to support ship operations is minimal. Crewmembers serve short tours, returning to home and family more frequently than Navy personnel. They need not be recruited again for sea duty since that is the career they already have chosen.

Much of the history that led to the expansion of MSC's fleet support role is covered in chapter 7—particularly the series of charger log tests that proved MSC's civilian manned ships can provide reliable support for the Navy fleet. During the charger log programs in the 1970s and early 1980s, MSC civilian-manned ships were accepted by their fleet counterparts. Early reservations voiced by "old hands" of the navy were overcome by productivity of NFAF ships, the lower cost of their operations, and the ingenuity, reliability, and professionalism of their crewmembers. They are in every sense members of the Navy team.

In the early 1980s, the NFAF reached a total of 30 ships. Included were an ammunition ship, a combat stores ship, fleet stores ship, more than a dozen oilers, eight ocean-going tugs, three fleet ballistic missile supply ships, and three cable-laying and repair ships. Additional fleet support ships of other types are scheduled to be added to MSC in the future.

It is probable that more oilers will be assigned. Additional ammunition ships are scheduled to be transferred from the fleet to MSC for operation. Other ships have been considered, including such diverse types as tenders, hospital ships (which MSC once operated), and an aircraft carrier for training flight crews. MSC would operate only the ship. Probably the best indication of what the future may bring for the NFAF is provided by a 1977 study into civilian manning of Navy auxiliary ships.

It examined the capabilities, costs, benefits, and risks of civilian versus "bluejacket" manning of auxiliaries. All of the Navy's 13 classes of auxiliaries were reviewed. In all cases, MSC manning was the least expensive of several options, including turning over auxiliary ships to private industry for operation. The study concluded in a 1978 report that more than $270 million could be saved annually in personnel costs alone if 95 Navy auxiliaries were transferred to MSC for civil service manning.

Ammunition ships in the NFAF in the early 1980s were deployed in both the Pacific and Atlantic Ocean areas. One is assigned to MSC, Pacific, the other to MSC, Atlantic. Fleet schedulers determine how they will be used and the MSC area commands provide crews to operate the ships. The area commands also are responsible for maintenance and exercise administrative control over all ship functions.

During the early 1980s, three MSC oilers operating in the Indian Ocean in direct support of the Navy task force averaged about one underway replenishment a day. Many were made at night. Other MSC oilers are equally active in support of fleet units worldwide. In some cases, MSC manned oilers make 15 to 20 underway replenishments in a week, frequency depending on the number of ships supported and the activities in which they are engaged.

USNS *Taluga*, the first NFAF oiler, is an example of the high productivity of civilian manned auxiliary ships. In the initial 6 1/2 years of MSC operation, *Taluga* made more than 1,000 underway replenishments. It added a second thousand underway replenishments (UNREPs) in the next 31 months. The ship and crew won an award as the Navy's outstanding transportation unit in 1974 and ranked first among all 7th Fleet oilers in productivity. *Taluga*'s operating costs were 50 percent of those for a military manned oiler and the ship spent more than 60 percent of its time at sea. *Taluga* saved the Navy more than $3 million annually—the difference between its operating cost and that of a military manned oiler.

MSC tugs (figure 9-18)—many specifically constructed for MSC operation—are assigned MSC area commands, but their schedules are dictated by needs of the organizations they support, usually the Atlantic and Pacific Fleets. The modern ocean-going tugs in the NFAF carry out towing operations worldwide. They also conduct salvage and rescue operations.

Civilian tug crews are augmented by trained Navy divers. Salvage specialists are put aboard when needed, but all NFAF ships have military departments. Headed by a salvage specialist Navy officer or a senior petty officer, the military departments carry out communications and liaison duties with the fleet units. They are very much a part of the ship crews. Experience indicates that Navy personnel consider duty with MSC on an NFAF or scientific support ship to be choice duty. Work hours are long and little time is spent in port, but they like the additional responsibilities they have. Because of the small size of the ship crews, a Navy member often is the only person in a particular rating, and sometimes is expected to handle other duties as well. Navy personnel enjoy the generally superior living conditions aboard MSC ships configured for civilian personnel.

In contrast to the tugs and oilers, MSC stores ships have relatively large crews—including military specialists responsible for the inventory and control of military supplies and for filling requests by fleet ships the stores ships support. Several hundred Navy personnel assigned to MSC serve aboard NFAF and scientific support ships.

30.211

Figure 9-18.—An MSC tug, designed by MSC.

While NFAF oilers, tugs, stores ships, and ammunition ships operate directly under control of the Navy fleet, the cable-laying and repair ships and fleet ballistic supply ships are somewhat different. Cable ships, for example, are involved in maintenance of under-ocean communications cables, in undersea surveillance programs, and in a variety of related operations. They generally work for the Naval Electronics Command, which designates operating areas and assigns tasks. Ship crews are augmented by technicians who carry out specialized tasks.

In cable-laying operations, MSC ships often are towed by a tug because the course they follow must be mathematically precise. In retrieval and transit operations, however, they steam under their own power. Two MSC cable ships, *Myer* and *Neptune*, have been extensively modified to prolong their lives. Both are equipped with new diesel propulsion systems as well as a wide range of modern equipment needed for their unique missions.

Fleet ballistic missile resupply ships operate mainly in the Atlantic Ocean area, resupplying Navy submarine forces with missiles—typical examples being the Poseidon and Trident missiles. Civilian crews are especially selected for duty aboard these ships because of the sensitivity of the cargo carried. Military personnel supplement the civilian crews and are primarily responsible for safety in loading and unloading operations, and in security of the cargo during its transit.

As long as productivity, cost, and effectiveness of operations are dominant considerations in Navy planning, continuing growth of the MSC mission for manning and operation of NFAF ships is certain. Low operating costs, general efficiency and productivity, and proven reliability of MSC ships have earned the confidence of Navy fleet units. The impact they make on effective utilization of skilled Navy manpower is particularly important when the recruiting and retaining of military personnel become more difficult. MSC operation of fleet support or auxiliary ships is not only a current Navy practice but a trend of the future.

SCIENTIFIC SUPPORT SHIP OPERATIONS

Though MSC assumed its fleet support missions in 1972, manning and operation of scientific support ships began much earlier, in 1958. The first scientific support ship was USNS *Josiah W. Gibbs*, a converted seaplane tender used for ocean suvey missions. Two years later, four range instrumentation ships were added and one recovered the first man-made object to reach outer space. Initially, scientific support operations were handled by cargo division personnel in both the headquarters and area commands. In 1962, special projects offices were established to monitor nontransportation operations that later were categorized as scientific support.

In the early 1980s, the MSC scientific support fleet included nearly 25 ships (figure 9-19), three chartered from private industry. Unlike NFAF ships which are Government-owned, some scientific support ships are chartered for specific missions. The number is relatively small at any given time and the ships themselves are small. Examples are those that support operations by Navy submersibles used in ocean research. An exception is cable layers which frequently have been chartered, including a Canadian ship. Few are available in the U.S. flag merchant fleet.

Requests by military agencies for the procurement or operation of scientific support ships by MSC are directed to Military Sealift Command. Other agencies, such as National Aeronautics and Space Administration (NASA), direct their requests to the Chief of Naval Operations who authorizes MSC to support the request and maintain liaison. Costs of MSC operation of all

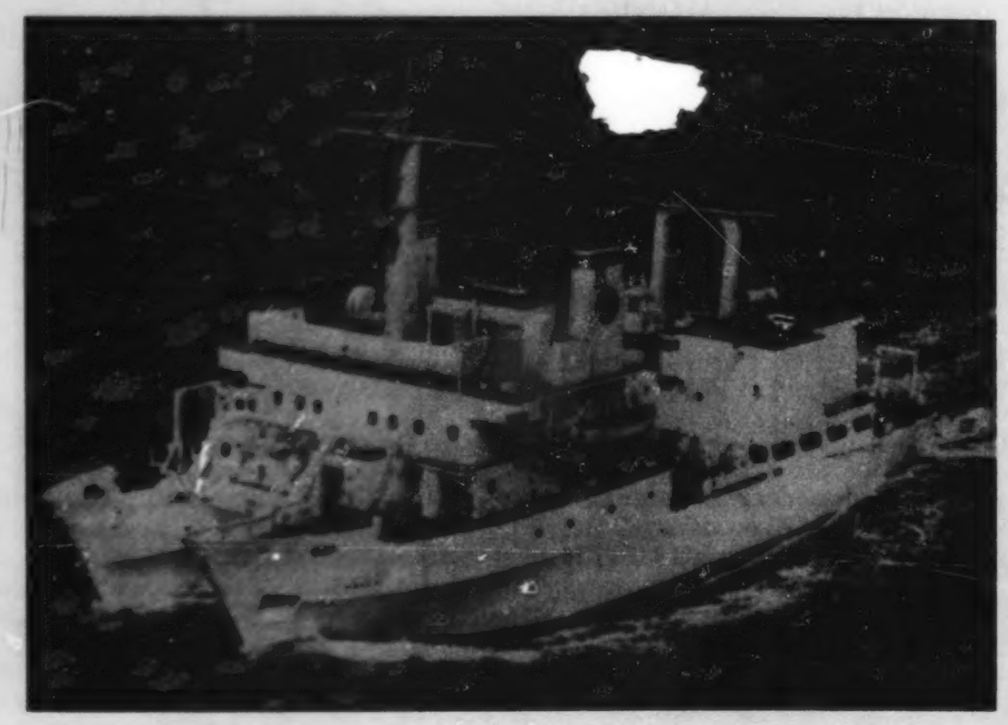

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Figure 9-19.—USNS Hayes is a unique MSC operated catamaran built specifically for scientific support missions. The twin hulls allow gear to be lowered through a well in the middle of the ship.

scientific support ships (figure 9-20) are billed to and paid by the sponsoring agency, generally referred to as the "ship sponsor."

Sponsors provide MSC with data concerning types and numbers of ships, ship characteristics required, facilities to be provided, communications requirements, personnel needed for special operations, and related data (figure 9-21). Arrangements between MSC and the sponsor are formalized in memorandums of agreement which set forth policy, requirements, guidelines, and other factors related to ship operations.

The types of ships MSC operated at the beginning of the 1980s included missile range instrumentation ships, oceanographic research vessels, surveying ships, and ships involved in undersea surveillance missions.

Missile range instrumentation ships, known as T-AGMs (T for MSC and AGM for range instrumentation), support Air Force and Navy missile test ranges and Navy submarine forces. They also have been actively involved in NASA space flights, including the Gemini, Mercury, and Apollo programs. In April 1981, USNS *General Vandenberg* and USNS *General Arnold* were on station receiving data from the space shuttle *Columbia* and helping monitor its return to earth. Whether supporting space flight or missile shots from land-based facilities or from submarines under water, MSC range instrumentation ships are equipped to track their targets and to gather a vast array of data. Those data help assure flight safety and are used for performance analyses, documents, and events, help monitor reentry of spacecraft into the atmosphere, and for a variety of other purposes.

Ocean survey ships operated by MSC carry a T-AGS designation. They conduct deep-water hydrographic, gravity, and magnetic survey operations—data needed for support of

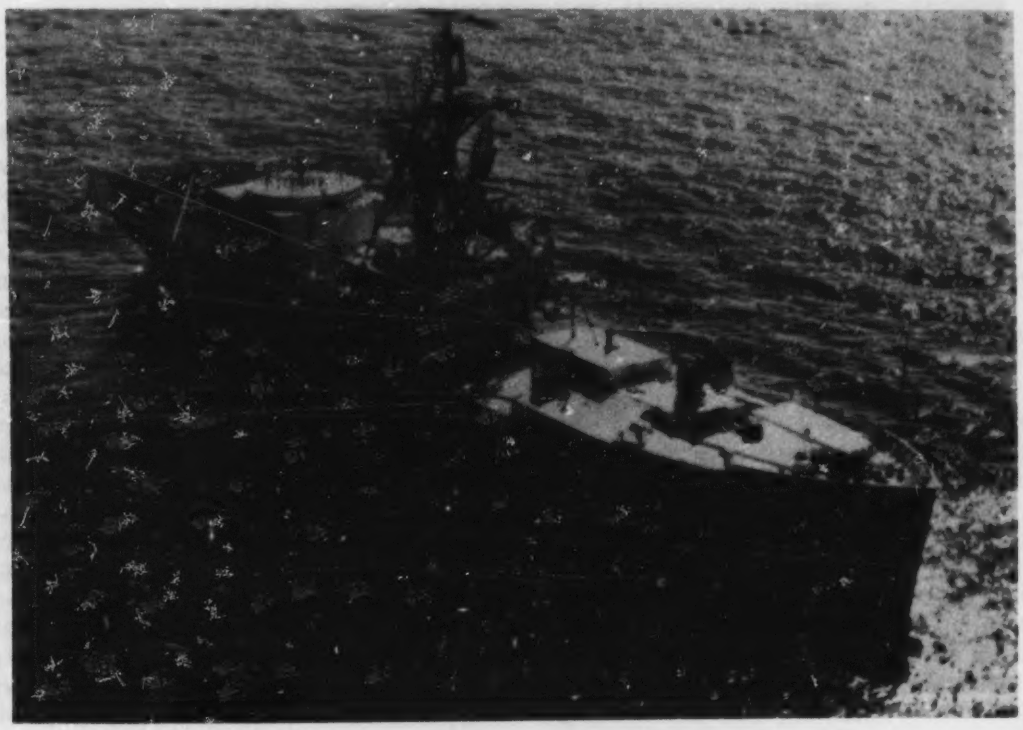

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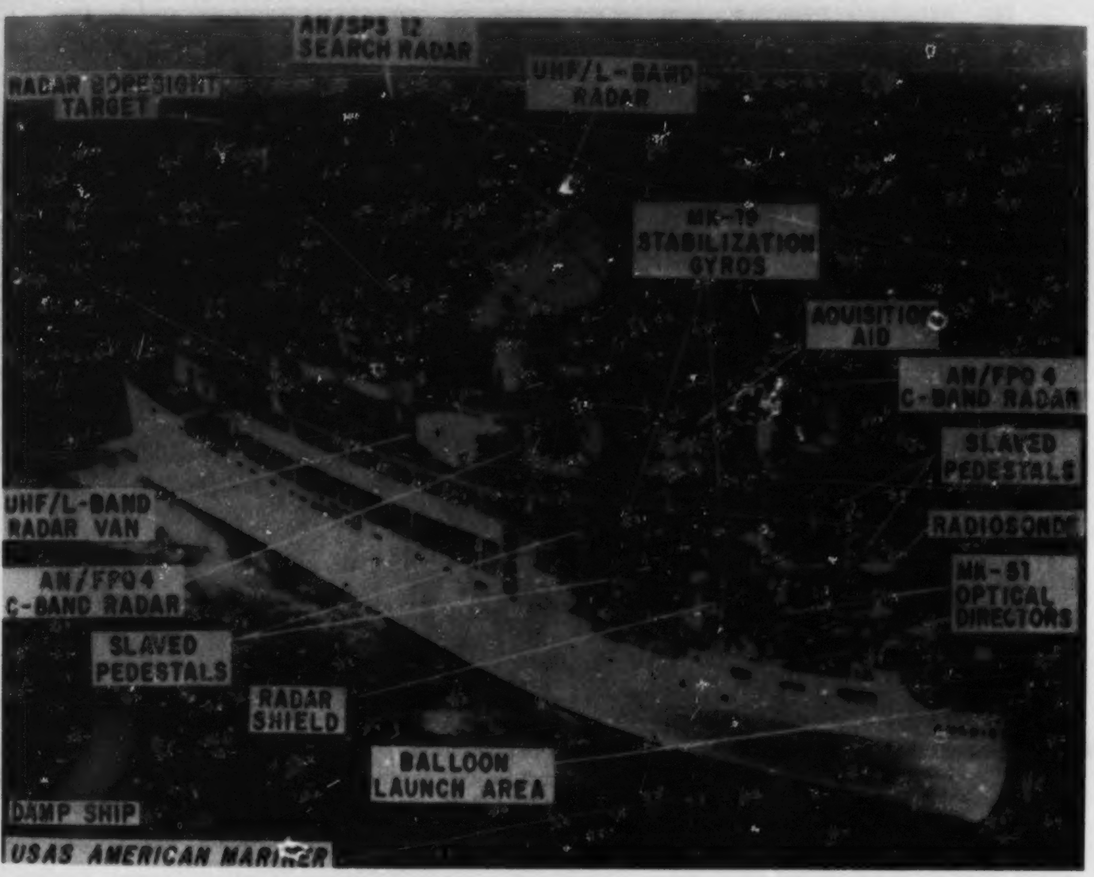
Figure 9-20.—A Chauvenet-class research ship, equipped with a helo pad.


AN/SPS 12
SEARCH RADAR
RADAR BORESIGHT
TARGET
UHF/L-BAND
RADAR
MK-19
STABILIZATION
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ACQUISITION
AID
AN/FPQ 4
C-BAND RADAR
SLAVED
PEDESTALS
RADIOSONDE
MK-51
OPTICAL
DIRECTORS
UHF/L-BAND
RADAR VAN
AN/FPQ4
C-BAND RADAR
SLAVED
PEDESTALS
RADAR
SHIELD
BALLOON
LAUNCH AREA
DAMP SHIP
USAS AMERICAN MARINER

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Figure 9-21.—This ship illustrates the variety of radar gear that is typical of scientific support ships.

antisubmarine warfare, mine warfare, and navigational systems used by Navy submarines (figure 9-22). Ocean bottom contours are charted by technicians and scientists working aboard MSC survey ships, ships equipped with a vast array of oceanographic sensors, acoustical measurement devices, and computer systems that process a multitude of data and help in the analysis of that data.

MSC-operated oceanographic ships carry T-AGOR designations. One of the best known oceanographic ships was the USNS *Mizar*, which carried out operations supervised by the Naval Research Laboratory and the Naval Electronics Command. *Mizar* helped locate the missing submarines *Thresher* (figure 9-23) and *Scorpion*. The ship's underwater cameras were able to photograph a string of pearls lying in thousands of feet of water. Another oceanographic ship, the USNS *Hayes*, has attracted worldwide attention because it is a catamaran—a sleek, two-hulled ship which allows scientists to deploy a variety of technical devices and instruments through wells located between the hulls.

Among research projects carried out by oceanographic ships are measurement of ocean currents, temperature and salinity of the water, ocean life and support systems for ocean life, effects of tides, and even an evaluation of the impact of hydrocarbons on the ozone. Functions

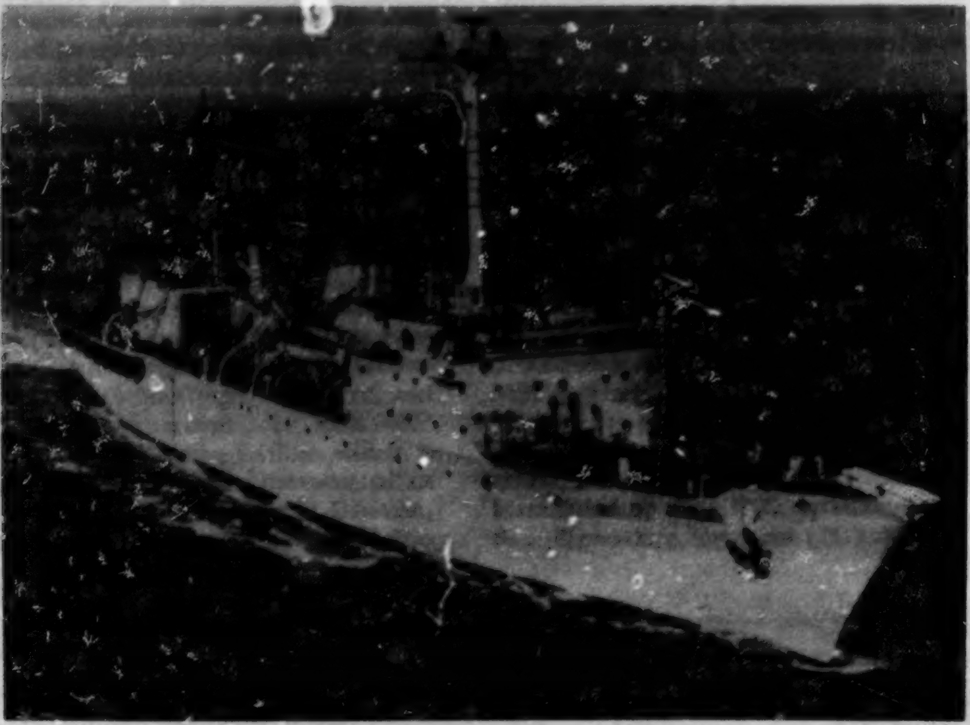

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Figure 9-22.—USNS Chauvenet, a research ship that collects data from both sea and shore stations.

performed generally include basic and applied research, forecasting, mapping, and charting. Hydrographic surveys by MSC ships result in charts and maps needed by specialists in many areas—by those seeking to harness technology for warfare purposes and those interested in economic and other types of peacetime development of treasures in the world's oceans. Scientific support functions provided by MSC ships often involve the use of helicopters that link ship and shore stations or deploy scientists and technicians from MSC ships.

Small boats also are used to take scientists up rivers or to otherwise inaccessible regions. In all these activities, ship's personnel take an active part, lending a hand to the sponsor-provided personnel who make up the technical crews.

Unlike sealift or tanker operations which are essentially transportation functions, MSC's scientific support ships (figure 9-24) basically carry out nontransportation types of missions. The scientific support ships serve a variety of "customers,"—agencies which establish requirements and provide technicians and scientists to carry them out but who depend upon MSC to furnish ship and crew, and to assure the safe and effective operation of that ship.

TESTS AND EXERCISES

Peacetime sealift supports military units deployed worldwide. It also helps develop immediate response capability while establishing a base for sealift expansion in an emergency. The dividends from the Navy's investment in MSC are compounded in peacetime by MSC involvement in tests and exercises. Many of these tests and exercises are mentioned in the final chapter on sealift augmentation and sealift readiness.

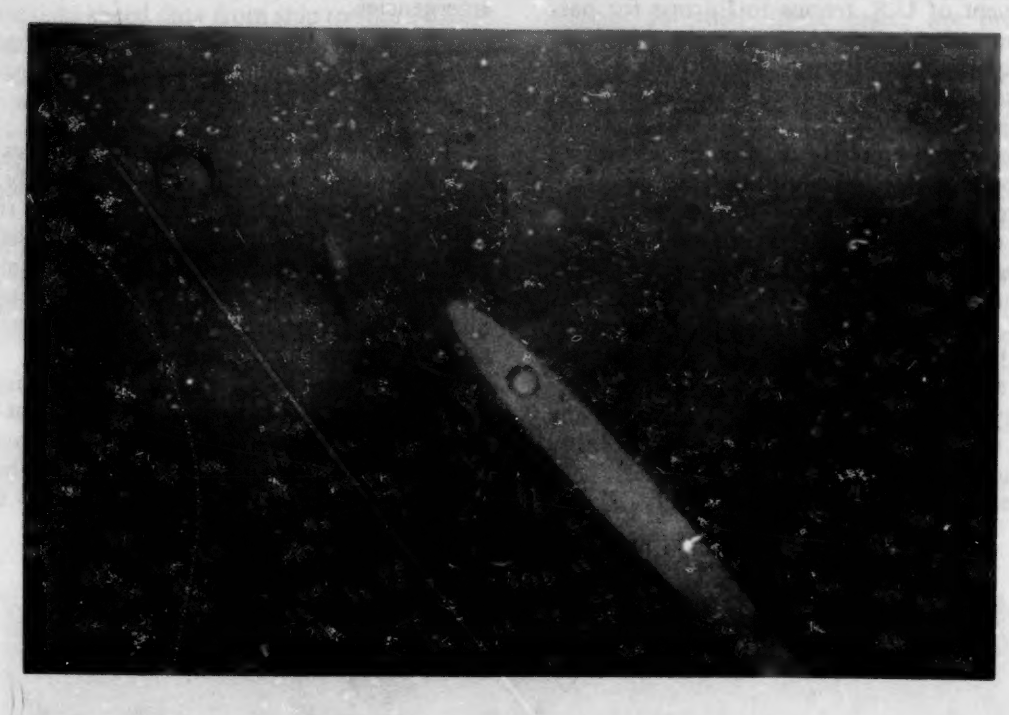

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Figure 9-23.—Overhead view of the topside rudder of USS Thresher.

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Figure 9-24.—The scientific research ship USNS Redstones.

A typical exercise is REFORCER, the annual deployment of U.S. troops to Europe for participation in a series of NATO exercises. MSC lifts troop equipment to Europe and returns it after the exercise—requirements they would fulfill in a real emergency.

Other exercises relate to support of Marine Amphibious Force units and joint Army-Navy-Air Force operations at sea. A number of tests feature military-industry participation, notably those designed to learn how to discharge container and other intermodal carriers in environments where port facilities or cargo-handling equipment may be lacking (figure 9-25). Command post exercises, again joint in nature, with Naval Reservists playing active roles, help evaluate the ability of the combat forces, the mobility operating agencies (MAC and MSC), the Maritime Administration, and ability of the maritime industry to respond to anticipated emergencies.

COMMUNICATIONS

Past exercises and operating experiences have demonstrated, repeatedly and convincingly, that timely communications are a must. As a result, MSC led the maritime industry, in the 1980s, in equipping its controlled fleet ships with satellite communications systems. MSC frequently requires that chartered ships also have maritime satellite communications systems.

In addition, MSC uses the Department of Defense telecommunications network that links DOD units worldwide. Navy fleet communications systems enable MSC Fleet Support Ships to maintain communications with other fleet units.

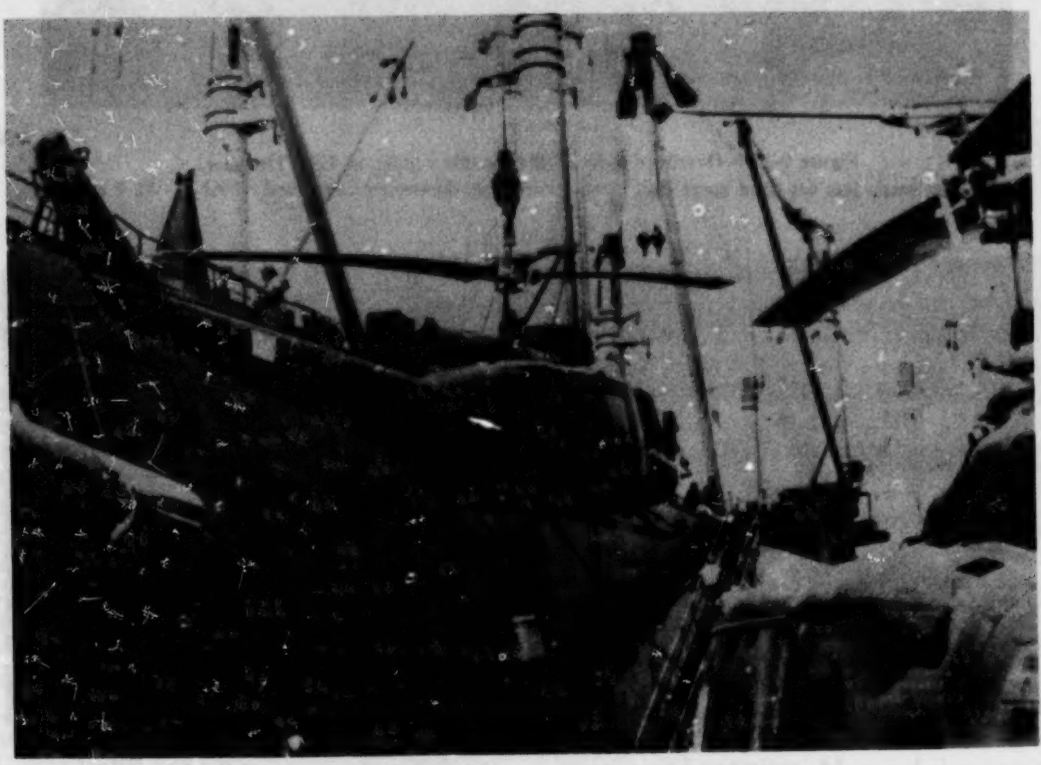

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Figure 9-25.—An MSC crew loads a helicopter for an exercise.

Shipboard computer systems also have been installed in MSC ships (figure 9-26), providing a capability to speed data from ship to shore-based support units or command control centers. Land lines and teletype systems link MSC command units worldwide and assure MSC contact with commercial carriers and supply points which originate military cargo. MSC communications progress in the 1970s and early 1980s has been great. But more remains to be done since immediate communications with the far-flung MSC armada of ships is a goal that requires additional and continuing investment in sophisticated communications technology.

SUMMARY

While the four basic MSC functions may not change significantly in the 1980s, or even the 1990s, there are certain to be substantial changes in the assets available to the command and the manner in which those assets are procured, employed, and replaced.

Scientific support operations have the lowest growth potential of the four functions, primarily because DOD budgetary assets are being channeled toward combatant fleet modernization and strengthening of mobility resources. Research mapping and charting, ocean survey, and other functions performed by MSC scientific support ships will probably consist primarily of those needed to support fleet activities—navigation, antisubmarine warfare, and so forth. Space flight support requirements will reflect the lowered budgets of NASA.

Fleet support assets may increase substantially. Fleet support may well represent a major portion of the command's ship operating functions in

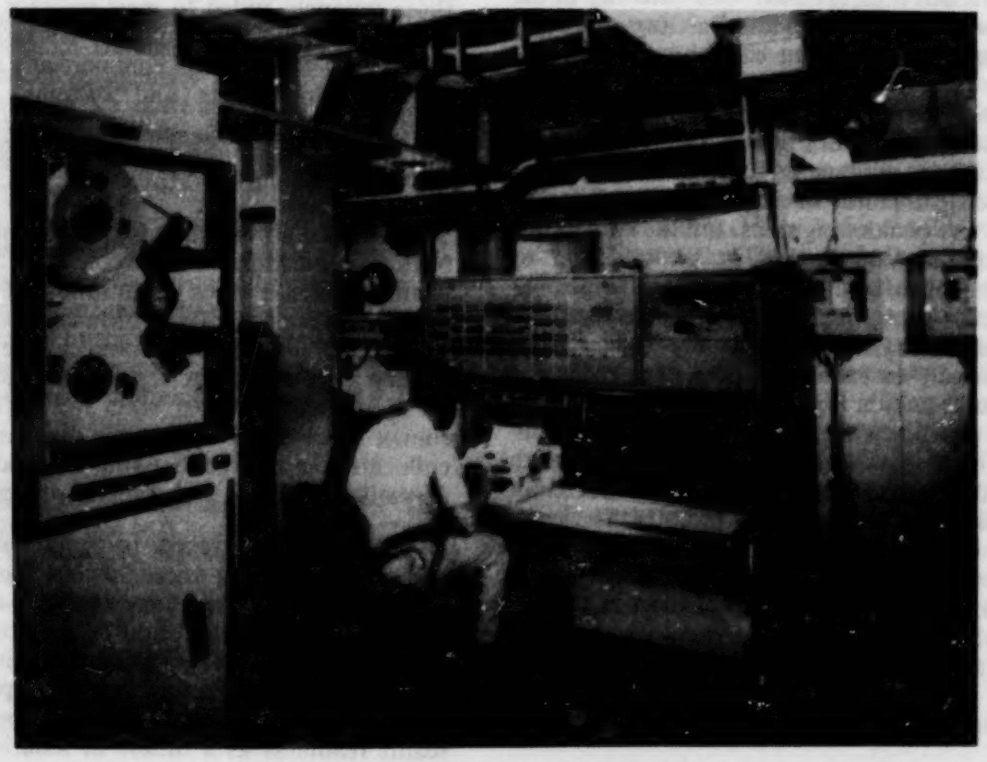

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Figure 9-26.—The computer room aboard USNS Wheeling.

future years. Ocean surveillance ships are already programmed as are other types of fleet support ships. As long as MSC can operate auxiliary ships at lower cost, help conserve Navy manpower, and assure reliable and productive service to the fleet, it is probable that the command will gain additional responsibilities in this area.

With greater attention being given readiness, with the realization that mobility is needed if U.S. Armed Forces are to be able to support U.S. policies and international commitments, it is likely that the command will be assigned responsibility for operating maritime pre-positioning ships and for manning and controlling a fleet of fast response ships maintained in a 5- to 10-day state of readiness. Pre-positioning of supplies and equipment at sea, as they have been pre-positioned at selected land bases for years, seems to be a concept that has been fully accepted by the military and by Congress. It is a concept more likely to be expanded than reversed. The volatility of the Southwest Asia and Middle East regions seems to assure that this is the case.

The same factors tend to result in continuing attention to modernization and enhancement of the MSC dry cargo controlled fleet. It may not expand significantly in size, except for the addition of pre-positioning ships. But the modernization trend that resulted in the addition of roll-on/roll-off ships and newer types of breakbulk ships in the late 1970s and early 1980s is expected to continue. Not only will the MSC Controlled Fleet continue to be modernized by the addition of newer types of ships traded in by industry for new designs, there also may be considerable attention given to providing MSC with ships designed to meet requirements that cannot be satisfied by the commercial industry. The heavy lift ship is one example. The small tanker is another. Cable layers also may be added to the scientific support fleet. Barge carriers, highly suitable for military support tasks, are expected to be assigned to the command. Tug and barge assets also may be added to the controlled fleet inventory in greater numbers.

More money will probably be made available for upgrading older ships now in the MSC Controlled Fleet—money for installing new propulsion plants and extending anticipated life of the ships.

These trends will reduce current reliance on the maritime industry for ships, shipping services, and special types of support. That reliance can only increase since the merchant marine already represents the bulk of the augmentation capability available to the Department of Defense. If it is to be relied on for emergency support, it is obvious that the merchant marine must be supported and strengthened in peacetime, and that the best way to do that is to help assure the economic stability and the technological advance of the industry.

Net results are that MSC will continue as a major procurement agency. The nature of its ship operations will change somewhat, but that role also will probably enlarge because of the addition of fleet support ships and readiness assets. New tankers also may be added to the MSC fleet—those uniquely suited to meet military requirements. Overall, the evolution of MSC as a manager of military and commercially acquired transportation assets and systems, and of readiness resources, will continue at an accelerating pace in the decade of the 1980s, and probably into the 1990s as well.

There is one possibility for change that would have a drastic impact on the command. Department of Defense plans to consolidate MSC and the Army's Military Traffic Management Command into a single agency would change many of the noted projections. A step in that direction was made in late 1981 when MSC and MTMC personnel involved in booking ocean cargo were collocated and cargo booking became a joint operation—without any transfer of personnel.

Questions that need to be resolved are numerous, including where the fleet support and scientific support operations would be assigned, whether or not airlift would be exempted from assignment to a joint agency, and whether or not the seemingly conflicting goals of peacetime economy in transportation and development of sealift readiness as a means of assuring troop mobility are compatible with each other. Changes made in MSC missions and organization will be added to this manual as they become effective.

CHAPTER 10

MSC PROCUREMENT

To accomplish its primary missions, MSC must supplement its nucleus fleet with commercial shipping and services. MSC procures ships, shipping systems or services, and ship overhaul and repair services using a variety of contracts. The type of contract used is dictated by operational needs or cargo and ship requirements. Because of the quantity and diversity of military cargo that must be commercially shipped, MSC is a major procurement activity within the Department of the Navy. It is probably the largest single customer served by the privately owned U.S. flag fleet.* MSC relies on private industry for ships, services and material. For these reasons, knowledge of the procurement methods and contracts that MSC employs is vital to an overall understanding of the command.

The MSC Contracting Office (M-10) handles all procurement of ocean transportation for the Department of Defense and, on occasions, for other executive agencies as well. Within the Contracting Office, there are four divisions, each responsible for consummating and administering particular maritime contracts. The Chartering and Contract Operating Division (M-10-1) generally oversees time and voyage charters and other contracts under which MSC acquires full reach of the vessel. Privately owned vessels used for scientific support missions or special projects are also procured by the Chartering Division. Military cargo that requires only a portion of a vessel's space moves on common carriers under MSC shipping or container agreements procured by the Liner Agreements and Freight Contracts Division (M-10-2). The Service Contracting Division (M-10-3) is responsible for the acquisition of ship repairs, hardware, and miscellaneous supply and service needs. The Contract Operations and Administrative Division administers contracts awarded by M-10-1 and has general responsibility for the "Build and Charter" program.

In previous years, MSC had three offices involved in contracting functions. In addition to the Contracting Office which handled all awards for ships, shipping services, and transportation systems, the Engineering Office was responsible for seeking bids, making awards, and handling the administration of contracts for the acquisition of ship repair, overhaul, modification, and ship maintenance services. The Supply Office also had a procurement function—arranging for supplies, equipment, and stock needed to support MSC operations. Counterparts of Engineering and Supply in the area commands on both the East and West Coasts performed similar functions.

However, in mid-1981 actions were initiated by MSC to consolidate all procurement functions in the Contracting Office under the Engineering Services Contracting Division, designated M-10-3. Consolidation of MSC contracting functions, except for headquarters support items purchased by Supply, was made necessary by the growing complexity of MSC operations that generate annual revenues in excess of $1 billion. More than 85 percent of MSC revenue flows directly to the maritime industry for services rendered, a fact which demands strong and centralized management of procurement functions that are worldwide in scope.

MSC Office of Counsel (M-7) fills a role similar to any corporate counsel and is closely involved in all procurements undertaken by the Contracting Office. Matters of contract and procurement law, admiralty law, international law, and claims litigation are routinely referred to counsel.

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*Under the 1904 Cargo Preference Act, 10 USC 2631, foreign flag ships may NOT be used for the movement of DOD cargo unless U.S. flag ships are unavailable at the time needed or will not otherwise meet DOD ocean transportation requirements.

GOVERNMENT PROCUREMENT

Unlike the private sector shipper who freely contracts for maritime services, a Government contracting officer must comply with Federal procurement statutes and regulations. The Armed Services Procurement Act of 1947 (ASPA) 10 USC 2301 *et seq.* authorizes agencies within the Department of Defense to enter into contracts and describes in general terms the procedures to be used. Regulations drafted by the Secretary of Defense to implement the statute provide further guidance for the contracting officer. The regulations are much more detailed than the statute itself. These regulations are collectively termed Defense Acquisition Regulations (DAR). Because of their statutory basis, they have the force and effect of law. MSC procurement policies and procedures are established by DAR and Navy contracting directives (NCD) implemented by the Navy.

Two procurement methods are permitted under the statute. The primary and preferred method is through formal advertising. With formal advertising, an agency determines the type of goods or services it needs, describes the goods or services in detail in an invitation for bids (IFB), and advertises the IFB to interested contractors. Those interested submit sealed bids that are opened at a date and time specified in the IFB. The lowest bidder is awarded the contract provided that he or she is a responsible contractor and submitted a bid that was responsive to the IFB. The contracting officer has some discretion in determining whether a prospective contractor is responsible or, in other words, appears to have capability to fulfill the terms of the contract. Whether a bid is responsive to the requirements of the IFB is a more objective determination. A contracting officer has less discretion to reject a bid for nonresponsiveness.

A second procurement method used by the Government is negotiation. Transportation services may be obtained through negotiation. Most MSC contracts are secured through competitive negotiated procurement.

Under a negotiated procurement, the agency describes goods or services it requires in a Request for Proposals (RFP). An RFP is sent to the greatest number of bidders possible to ensure competition. Offers are forwarded to the agency by prospective contractors on a date specified in the RFP. The contracting officer receives all offers, analyzes them, and determines which prospective contractors are within a competitive range. All offerors who are determined to be responsible and whose offers are reasonable, generally are considered to be within the competitive range.

The contracting officer or a designee then initiates negotiations with each offering contractor. Through these discussions, the prospective contractor and agency are able to clarify any ambiguities about the goods and services to be provided under a contract. Thus, a prospective contractor who may not be technically responsive to the RFP is given opportunity to correct or amend the offer. During these negotiations, the contracting officer is not allowed to reveal any aspect of other proposals or engage in any type of "auctioneering." After negotiations are completed, final offers are solicited from each offeror by the agency. An award is generally then made to the contractor who has offered the best proposal, price, and responses to other factors considered.

At any time during this procurement process, an offeror who is concerned that an agency has not complied with any statutory provision or regulation may file an appeal with the contracting officer or the General Accounting Office (GAO). Any impropriety in the award of the contract also may be appealed to the contracting officer or the GAO. Under some circumstances an appeal may be filed with a Federal district court.

BERTH LINER PROCUREMENT

A significant portion of military cargo moves in berth-line ships. Berth-liner operators are common carriers operating ships on scheduled sailings over established trade routes and providing service to all on a first-come, first-served basis. Some berth-liner operators are organized into conferences that set rates and conditions of services for all members. The Shipping Act of 1916 allows the Federal Maritime Commission (FMC) to review noncompetitive agreements made by conference members. When approved by FMC, such agreements provide limited immunity to the carriers from antitrust prosecution under the Sherman and Clayton Antitrust Statutes.

Independent berth operators and conferences must file their shipping rates or tariffs with the FMC. Usually, these tariffs are for specific commodities or types of commodities shipped on the carriers. Unlike the Interstate Commerce Commission (ICC) and Civil Aeronautics Board (CAB), which regulate ground and air transportation respectively, FMC has no authority to set shipping rates in U.S. foreign commerce. The FMC may, however, investigate filed rates or tariffs. It does so on its own initiative or at the request of an interested party. If it determines that rates are so unreasonably high or low that U.S. commerce is adversely affected, the FMC may disapprove such rates. In the domestic offshore trade (e.g., Puerto Rico, Alaska, Hawaii, and Guam) the FMC has the power to set just and reasonable rates.

Military cargo offered by MSC to the berth liners is offered in less-than-full-shipload lots and shares space with cargo shipped by private business. The most common practice, since the advent of intermodal transportation, is for shipments from a variety of Defense Department sources to be consolidated in containers, under military auspices, for delivery to commercial terminals.

The containers are loaded onto container ships and carried under rates and terms set forth in an MSC container agreement. Breakbulk or uncontainerized cargo moves on vessels whose tariffs and conditions of service are described in an MSC shipping agreement. Both the container agreement and the shipping agreement contain uniform terms and conditions for the carriage of military cargo between the continental United States and destinations in foreign countries. At 6-month intervals, MSC negotiates new rates with U.S. flag ocean carriers under the container and shipping agreements. Rates are offered in response to an RFP and are arrived at by negotiation between MSC and responding carriers.

The history of MSC competitive procurement of ocean transportation services from berth-line operators reveals much about industry practices as well as difficulties initially encountered by MSC in implementing federally established contracting procedures.

HISTORY OF BERTH-LINER AGREEMENTS

Before 1950, both the Army and the Navy used space charter contracts for the commercial movement of military cargo in less-than-shipload lots. Based on commercial tariffs, rates were stated in terms of cost-per-cubic-foot of space used aboard the vessel. The Army and Navy also were charged for "broken stowage," space used for shoring or bracing the cargo, or space that was unusable for additional cargo because of the nature of the military cargo. An example of the latter is space above wheeled vehicles carried in a ship's hold. Individual contracts, in identical terms, were signed with each berth operator on a particular trade route.

This system was less than satisfactory for both Department of Defense and the carriers. Because of cargo scheduling difficulties and shortfalls, Defense often paid for space not needed or used. Carriers were incurring extra administrative costs since they had to credit Government for the cost of the stevedoring services when ships were loaded and discharged at military terminals.

After 1950, following assignment of responsibility for ocean transportation to the Navy, shipping contracts replaced space-charter contracts. Shipping contracts listed general cargo rates for specific military commodities. The rates were based upon a dockside measure and included a factor for broken stowage and a discount for military loading and discharging of ships which was determined on the basis of straight-time stevedoring costs at military terminals. Rate reductions were given the Government for volume shipments. Like the space charter agreements, the shipping contracts were uniform for all carriers in each particular trade, thereby making rates the same for all carriers serving a geographic area.

Under the shipping contracts, military cargo was allocated to each carrier in proportion to the number of sailings it made within a defined coastal area. The cargo allocation system was based on a "rolling average" of sailings in each trade. It enabled operators to use the same ship for sailings in a number of different geographic areas and that made them eligible to participate in a variety of cargo allocation plans. Assuming a fairly constant flow of military cargo, operators could anticipate good vessel utilization.

Despite the apparent simplicity of this arrangement, military cargo rates, contract terms, and conditions of service had to be continually adjusted. To negotiate more favorable rates with MSC, the carriers organized into two separate conferences, the Atlantic and Gulf American Flag Berth Operators (AGAFBO) and the West Coast American Flag Berth Operators (WCAFBO). Carriers in both enjoyed immunity from antitrust laws under the provisions of the Shipping Act of 1916, which provided for FMC review and approval of noncompetitive agreements by conference members.

Generally, rates under shipping contracts were negotiated upward when carriers proved that their actual operating costs warranted such an increase. A corresponding increase in the carriers' commercial rates was a necessary element in that proof. Theoretically, rates also could be negotiated downward. More frequently, however, MSC used a commercial tariff under a Government Bill of Lading (GBL) when a commercial tariff was available at a lower rate than offered under a shipping contract.

During the period of reliance on shipping contracts, MSC often was concerned that rates charged by the carriers were higher than the commercial tariffs for some specific commodities. In the early 1960s, Sapphire Steamship Lines Inc. offered commercial rates that were significantly lower than the military rates established by shipping contracts then in effect.

Using GBLs, MSC began to book a significant volume of military cargo with Sapphire to take advantage of the cost savings. AGAFBO, representing American flag berth operators in the Atlantic and Gulf Coast trades, responded by reducing their military rates, thereby precipitating a rate war in the ocean transportation industry.

Within this context, in 1966 the Department of Defense took steps to institute competitive negotiated procurement of rates for military cargo moving internationally. Empirical data from MSC showed that commercial cargo rates for lift of military cargo ranged from 4 to 21 percent lower than the military rates. Since it had become apparent during the Sapphire/AGAFBO rate war that carriers were willing to compete with one another for military cargo, competitive procurement of container and breakbulk rates seemed to be feasible and in the best interest of the U.S. taxpayer.

THE PRESENT SYSTEM

Competitive procurement of ocean common carrier services under the MSC container and shipping agreements is conducted in a manner similar to the procurement of ship charters. Two or 3 months prior to issuing an RFP, MSC initiates a series of conferences with its area commands and military service representatives in the United States and overseas. At these conferences, problems encountered during any previous contract period are reviewed. Recommendations are made and discussed concerning changes in contractual terms that warrant inclusion in the next RFP. Prospective offerors are also invited to submit suggested changes. However, no formal negotiations with offerors take place during these presolicitation conferences.

Many of the suggested changes by both industry and MSC customers relate to the command's container agreement since intermodal transportation is still an evolving system. On the other hand, the MSC shipping agreement for the movement of breakbulk cargo is revised only slightly from year to year, and recommended changes usually are minor.

After RFPs are drafted by MSC, they are sent to interested offerors. Rates are solicited for general classes of cargo on numerous routes, for both shipping and container agreements. Initial offers under each RFP are received and evaluated and MSC conducts extensive negotiations with each offeror. "Best and final" offers ultimately are solicited from each. Final rates offered by each operator are then listed in the shipping and container agreements and in effect are firm for a period of 6 months. These rates are used to book cargo with the ocean carriers. Cargo is offered first to the lowest cost carrier furnishing acceptable space and services on a particular trade route. If the lowest cost carrier cannot deliver the cargo when and as required, the cargo is offered to other carriers in the ascending order of their rates.

The MSC container agreement contains rates from each carrier for three types of container cargo. There is a rate for containers of general cargo, a rate for refrigerated boxes, and a rate for containers of vehicles (both privately owned vehicles [POV] and military). Approximately seven commodity rates are listed in MSC shipping agreements. Included are rates for hazardous cargo, on-deck stows, extra-long cargo, general cargo, light vehicles, heavy vehicles, and refrigerated cargo.

TRAMP SHIP PROCUREMENT

In contrast to berth operations where ships provided service between specified ports as common carriers, tramp shipping provides private or contract carrier service operating on no fixed route or predetermined schedule. These ships go wherever cargo is available and take it to whatever destination is required. Since tramp ships do not operate on fixed routes, no tariff can be developed. Rates, terms, and conditions of service are all negotiated between the ship operator and the cargo shipper.

Unlike the berth-line operator who may carry cargo from a number of different owners on a scheduled voyage, the tramp-ship operator will provide the entire reach of the vessel to a single shipper. The contractual agreement between a ship operator and a cargo shipper is called a charter party, generally referred to as a "charter." The cargo owner who leases the vessel from its owner is referred to as the charterer. The other party to the contract is the contractor. A charter is literally a form of rental—or a lease.

Charters are fairly standard in the maritime industry. There are three main types of charters—the time charter, the voyage charter, and the bareboat or demise charter. All types are used by MSC. The type of charter used is usually dictated by operational or specialized cargo requirements, or by strategic considerations. MSC obtains vessels under charter agreements through the use of competitive negotiated procurement rather than by formal advertising.

PROCUREMENT PROCEDURES

When military sealift requirements cannot be met by ships in the MSC Controlled Fleet, the Transportation Office will advise the Contracting Office of the requirement in writing. Information provided will include the volume and type of cargo to be moved, the type of ship or ships required, the ports of loading and discharge, and the time frame during which ships or shipping services are needed. Without a validated requirement, the Contracting Office has no authority to enter into a contract.

Just as lift requirements are provided the Contracting Office by Transportation, requirements for ship overhaul or repair, or for shipboard equipment, are provided by MSC Engineering. The Engineering Office is responsible for the preparation of requirement specifications.

When a requirement has been established, the Contracting Office issues an RFP or IFB. The latter is used most often for ship repair or maintenance services or for procurement of equipment or material. However, an RFP also can be used for such procurement, and it often is. In either case, the IFB or RFP is sent to all individuals on an MSC bidder list, which consists of shipyards, shipowners, agents and brokers, or ship suppliers. The bidder list is updated regularly to assure that all interested businesses—large and small—can compete for MSC awards. To ease dissemination of RFPs or IFBs, the bidder list is divided into categories of businesses, thus assuring that only those firms interested in a particular type of procurement receive the solicitation.

Normally, there is a relatively long lead time for solicitation of offers for ship repair, overhaul, or maintenance work, as well as for procurement of equipment. When lead time is sufficient, solicitations are usually issued by mail. In procurement of ships or shipping services, however, there is often a short deadline. If such deadline precludes mailing of an RFP, brokers and vessel owners may be notified by teletype. In arranging for spot charters of ships or short-term contracts to meet operational needs, arrangements are routinely made by telephone among operators and shipowners and MSC Contracting Office specialists. That reflects the standard industry practice. MSC conforms to the practice to remain competitive with industry in the open market for privately owned ships and shipping services (figure 10-1). In all cases, the MSC Contracting Office must assure that the greatest possible competition for command awards is obtained.

Upon expiration of the time specified for receipt of proposals, offers are abstracted and evaluated in preparation for negotiations. Negotiations leading to the chartering of a ship focus primarily on compensation, although other terms and conditions of carriage or employment are discussed. Rates offered by brokers, shipowners, or shipyards may be high or low, depending upon worldwide market conditions. If an owner considers he or she is in a strong position, he or she probably will not reduce offered rates during negotiations. The owner may, however, be willing to modify other clauses in the proposed contract.

On the other hand, if an owner feels the market is depressed and that there is strong competition for the Government contract, he or she is likely to be willing to agree to reduce rates to assure competition in the marketplace. Because market conditions in the shipping community are so volatile and immediately affect MSC procurements, MSC negotiators must be well informed about the worldwide shipping market, the peculiarities of the military requirement, and the urgency of MSC needs.

Negotiations among MSC, brokers, and owners offering vessels for a particular requirement usually are accomplished by telephone; although face-to-face negotiations are conducted for long-term charters. After negotiations are complete, best and final offers are requested. The owner or broker offering the lowest overall price is awarded the contract. In commercial terms, the vessel is fixed with a confirming wire, known as a fixture message. It is sent to the owner or his or her broker. This message sets forth the salient points agreed upon during the negotiations.

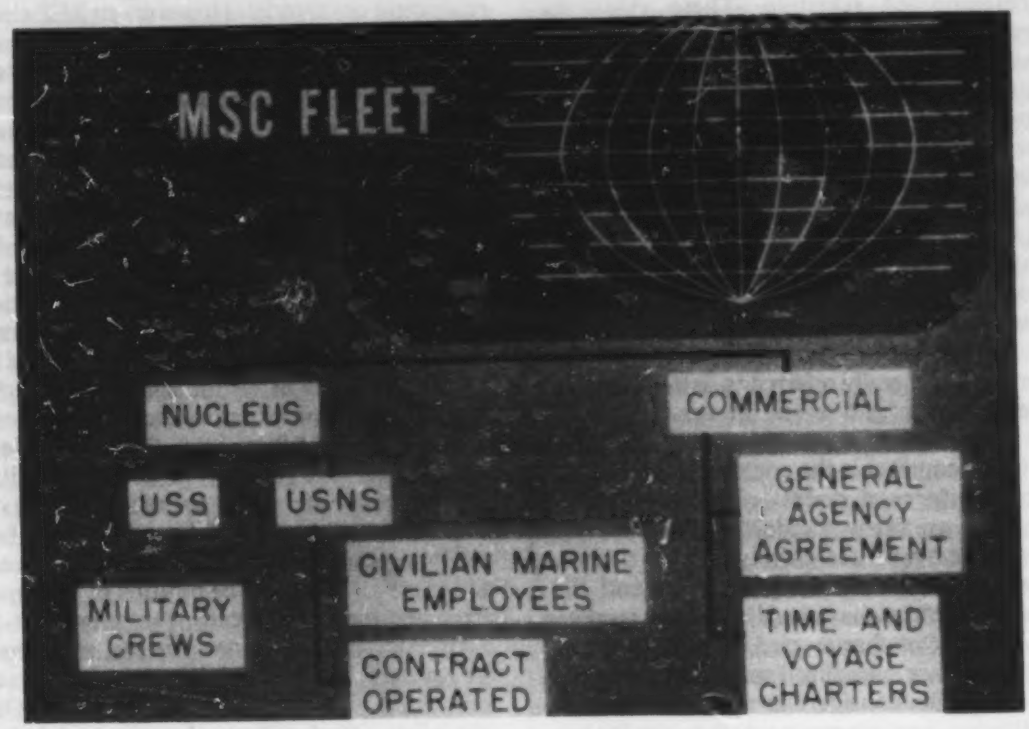

Figure 10-1.—MSC Fleet.

After negotiations and a vessel fixture, the formal charter party is prepared by the Contracting Office and reviewed by counsel. The charter party is signed on behalf of the Government by the contracting officer and by the owner.

The charter agreement is prepared in four originals. Two copies are retained by the Contracting Office for the procurement and administration files; one copy by the owner/operator and one copy by the MSC Comptroller. The latter is used to authenticate bills payable under the contract.

Contracts (table 10-1) for ship repair, overhaul or maintenance, or procurement of material are handled in much the same way.

THE TIME CHARTER

The most common contract for ship service acquisition used by MSC is the time charter. MSC, as charterer, has full use of the vessel for a specified period of time. A chartered vessel is under MSC control as to ports of loading and discharge, cargo carried, and related matters. The vessel may be required to make as many voyages as can be completed during the term of the contract.

During the period specified in the time charter, the ship operator is solely responsible for managing and navigating the vessel. For the services of the vessel and the crew, the operator is paid charter hire at a daily or per diem rate. Hire is paid whether the vessel is sailing, working cargo, or idle, provided that the vessel, its crew, and appurtenances are in full operating condition. Terms are negotiated for reduced charter hire cost if the vessel is idle for long periods during the term of the contract.

Table 10-1.—Types of Contracts for Ship Service

1. **Time Charter**
2. **Voyage Charter**
3. **Bareboat or Demise Charter**
4. **Affreightment Contract**

The standard MSC ship time charter imposes a number of specific duties on both the operator and charterer. The former's duties relate exclusively to the vessel and its operation; the latter's relate to the cargo. A brief summary of some of the provisions and terms of the time charter may assist you in understanding the distinctive features of this type of contract.

Under the standard time charter, a ship operator is required to present the vessel at an agreed port of delivery between specified dates known as tendering and canceling dates. If the vessel is not delivered by the canceling date, the charterer may cancel the charter with no liability incurred. If the ship is available before the initial tendering date, the charterer is not required to accept delivery. The charterer may do so, however, if acceptance is to his or her advantage. Since the per diem rate begins to run upon acceptance, many owners are anxious to have their vessels accepted before the tendering date.

Upon commencement of the time charter, the operator warrants that he or she has exercised due diligence to provide a seaworthy vessel and the vessel is ready in all respects to fulfill the tasks stipulated by the charter. The warranty of seaworthiness is an important one and is preserved throughout the entire charter period. Failure to exercise due diligence to provide a seaworthy vessel would be a breach of the charter party and enable the charterer to cancel the agreement.

When the vessel is presented at the port of delivery, an on-hire survey is conducted by representatives of both the owner and MSC. Usually, personnel from MSC area commands or offices participate in the survey. The purpose of the survey is to inspect the vessel's deck, cargo spaces, and equipment. Since MSC is responsible for all damage to the vessel caused by loading and discharging operations during the course of the contract, it is vitally important that an accurate survey of existing conditions be conducted. A comparison between the "on-hire" survey and the "off-hire" survey (performed at the completion of the contract) is made when the contract is terminated so that any liability MSC may have incurred can be determined. MSC also surveys shipyards to assure they are capable of meeting contractual requirements. A list of yards eligible for MSC work is maintained by the command.

Under a time charter agreement, the shipowner is responsible, through the ship master, to accomplish voyages made under the charter with utmost dispatch. To do so, a vessel must, as a minimum, maintain the speed warranted in the charter. If a ship does not perform as warranted or deviates unnecessarily from the most direct course to the next scheduled port, it is placed off-hire. Charter hire ceases for the period of time that the vessel is off-hire. A ship may also be placed off-hire during cargo operations if a breakdown of the shipboard equipment prevents the loading or discharging of the cargo, provided, of course, that the breakdown was not the fault of the charterer. Any other deficiency relating to the ship's crew, stores, or equipment permits the charterer to suspend payment pursuant to the off-hire clause of the charter.

Because of the responsibility for managing as well as navigating the vessel, the operator of an MSC time chartered ship must provide and pay for all provisions, subsistence, wages, and other charges relating to the master, officers, and crew. The operator also pays for normal marine risk insurance; all necessary stores, including bunkers, boiler water, and ballast; and all other charges or expenses incident to the operation, navigation, maintenance, and management of the ship. However, provisions sometimes are negotiated into the agreement that make some of these costs subject to reimbursement by a charterer.

Since a time charter agreement provides that a ship is at the service of the cargo owner, the ship operator must make available to MSC the whole reach of the ship holds, decks, and usual places of stowing cargo. The operator may, however, reserve sufficient space for berthing and for storing fuel and provisions necessary to enable the vessel to perform efficiently under the contract.

Under the standard time charter agreement, the charterer is responsible for loading and discharging operations. The ship operator must provide all necessary equipment including ropes, slings, and blocks that will enable ship cargo booms to be operated to their warranted capacity.

A time charter agreement obligates MSC, as charterer, to accept delivery of a ship at the port of delivery agreed upon in the contract within the specified tendering dates, provided that the owner has exercised due diligence to provide a seaworthy vessel. Upon acceptance of a ship, MSC is required to pay the operator the agreed charter hire rate, to reimburse the contractor for the cost of certain items of crew overtime, and to pay the cost of bonuses paid to members of the crew because of the ship's employment at MSC's direction. Other costs paid by the owner, which are specifically reimbursable by MSC under the charter, are paid by MSC. Expenses such as canal tolls and port charges are paid for by the operator or his or her agent. Reimbursement of these expenses is made by MSC upon submission of properly supported invoices.

Under a time charter agreement, MSC may direct that a ship proceed to any safe port or safe berth. During the period of the charter, a ship may sustain hull damage while docking at a loading or discharge port. Claims may be made that the berth was unsafe and MSC, as charterer, may be liable for the cost of repairing the damage. Often, however, the damage is caused by negligence in conducting docking operations or by a defect in the berth that should have been apparent to an observant master or crew. Surveys and reports of such incidents, performed by MSC representatives, are of paramount importance in resolving such disputes.

A time charter agreement permits MSC to move any lawful cargo aboard the vessel within the geographic trading limits of the vessel detailed in the charter. Under the time charter, the Government is responsible for loading and discharging the vessel. Stevedoring services are sometimes provided at military terminals operated by the Army or the Navy. At foreign ports where military stevedores are unavailable, MSC requires the owner to hire stevedores subject to reimbursement by MSC.

Cargo stowage plans generally are provided by the Army's Military Traffic Management Command (MTMC) and take into consideration such variables as the cargo size and condition as well as vessel characteristics. Since the operator is contractually responsible to MSC for the safe navigation of the vessel, a ship master may reject a stowage plan if the safety or the stability of the vessel would be endangered. The master is ultimately responsible for the safe stowage of the cargo and must determine if the cargo is properly stored prior to sailing. The master must also advise the charterer of any characteristics of the vessel of which the charterer is unaware and which would affect safety of the military cargo.

Many times charter and voyage charter agreements incorporate sections of the Carriage of Goods by Sea Act, U.S.C. 1300-1315 (COGSA), a measure designed to protect maritime common carriers. Its provisions place limited liability on the vessel operator for cargo damage during a ship's transit. Generally, the ship operator is responsible for care and custody of the cargo. Thus, if a steam pipe springs a leak and the escaping steam damages the cargo, the operator may be held responsible.

Provisions of the Act incorporated into the standard time charters also contain an interesting and unexpected quirk. If cargo is damaged because of negligence on the part of the master or crew, the operator of the vessel cannot be held liable to the cargo owner. Thus, a master may negligently run an MSC chartered vessel aground resulting in loss or damage to military cargo, yet the Government, under provisions of the contract, cannot seek reimbursement from the shipowner.

Despite this apparent absurdity, these provisions are standard within the maritime industry and simply reflect the public policy contained in the law that holds that maritime risks should be shared by vessel and cargo owners.

At the end of the term of a charter, MSC must redeliver the vessel to its operator. A redelivery survey is conducted by representatives of the operator and MSC. This survey is used in the negotiation of a settlement of any claims against MSC for vessel damage resulting from loading and discharging operations.

VOYAGE CHARTER

The voyage charter, also a common MSC contract, is used primarily for chartering tankers to carry petroleum products. In contrast to the time charter, which allows MSC to use the vessel for a specified period of time, the voyage charter agreement provides services of the vessel to MSC for a specified voyage (port to port) or group of successive voyages. In the latter case, the charter would be termed a consecutive voyage charter.

The ship operator is paid an established freight rate. It is based upon the number of tons of cargo the vessel delivers. This may be expressed in the contract as a dollar rate per ton. In the case of the charter of a U.S. flag tanker, a numerical figure whose dollar value may be determined by reference to a formula contained in the American Tanker Rate Schedule (ATRS) may be used.

Because of the system of payment provided for in the standard voyage charter, it is in the operator's interest to complete a voyage expeditiously so that another voyage may be undertaken. In many of the MSC consecutive voyage charters, the agreement allows the operator to undertake as many voyages as can be accomplished within a specified period of time. The more cargo delivered by the operator, the greater the revenue, thereby increasing the profitability of an operation. In this connection, a voyage chartered vessel would never be placed off-hire because of equipment breakdown or related circumstances. Payment of freight simply would be delayed until cargo is delivered.

There are many similarities between a time and voyage charter agreement. Like the time charter, the voyage charter describes the vessel by name, class, registered tonnage, homeport, and deadweight tonnage and/or cubic cargo capacity. The voyage charter also provides tendering and canceling dates for initial presentation of the vessel. The contract clauses containing these dates are exactly the same as the tendering and canceling clauses in a time charter, and have the same effect.

The voyage charter lists warranties comparable to those of the time charter. The operator of the vessel under voyage charter must exercise due diligence to provide MSC with a seaworthy vessel. This warranty extends throughout the period of the charter. Failure to exercise due diligence to provide a seaworthy ship gives MSC the right to cancel the charter.

The voyage charter contains a number of other standard clauses, which include a description of the type of cargo to be carried, the geographic range of the loading and discharge ports, the time allowed for loading and discharging, and the party responsible for loading and discharging operations (invariably the charterer).

Under a voyage charter, time allowed for loading and discharging the vessel is referred to as "laytime." It usually is expressed as a given number of days. If the laytime expires and the loading or discharging has not been completed, the vessel will be on "demurrage" for the period of time it takes to complete the cargo operations. Demurrage is actually a penalty paid by the charterer to the operator because the charterer is preventing the operator from completing the voyage and earning revenues. Demurrage is a form of liquidated damages, expressed as a sum of money per day, or pro rata part of a day.

A voyage charter also may provide for the payment of "dispatch." Dispatch is a bonus or premium paid to the charterer by the owner if the ship completed loading and discharging before laytime expired. Dispatch is also expressed as a certain sum of money per day or pro rata part thereof. It usually is one-half the demurrage rate.

The amount of laytime and the rate of demurrage and dispatch are negotiated before the charter is signed. They reflect such considerations as the type of ship, competitive conditions of the charter market at the time of the fixture, type of cargo to be carried, loading and discharging facilities, and related matters.

Under a voyage charter, the operator assumes responsibility for the care and custody of the cargo. Like the operator of the time chartered vessel, the operator of the voyage chartered vessel is not responsible for damage to the cargo resulting from the negligence or mismanagement of the master or crew because provisions of the previously mentioned law are included in the charter agreement.

In addition to paying the cost of operating a ship, an operator, under an MSC voyage charter, arranges and pays for services required to support the ship in port. These include pilotage, towage, line handling, crew overtime, and agency and brokerage fees. The operator of a voyage chartered vessel procures and pays for all fuel consumed.

MSC has less operational flexibility with a voyage chartered vessel than with a time chartered vessel. In the voyage charter, the geographic ranges for loading and discharging ports are specified in the contract. Any deviation constitutes a modification to the contract that must be negotiated by the contracting officer. Moreover, any interruption in a voyage caused by the charterer (such as may result from an order by MSC to rendezvous at sea for replenishment operations) requires negotiation of a contract modification. The time chartered vessel, however, can be directed to proceed to any safe port and to conduct any operations within the ship's capability. The time chartered vessel is paid for at a per diem rate provided it is in the service of MSC, while the voyage chartered vessel must deliver cargo to earn its freight.

BAREBOAT OR DEMISE CHARTER AND OPERATING CONTRACTS

The bareboat or demise charter agreements are somewhat like the agreements for the time and voyage charters because the charterer obtains full use of the vessel. There are, however, significant differences between a bareboat charter and time or voyage charters. The differences can have important legal consequences. Under the time and voyage charters, the owner remains responsible for management and navigation of the vessel while moving the charter's cargo. With a bareboat charter, MSC leases the vessel, its equipment, and appurtenances (the bareboat) but not the management services of the owner. For all practical purposes, ownership passes from the owner to the charterer. In legal terms, the charterer becomes owner of the vessel *pro hac vice* (for this occasion).

Upon chartering a ship or ships under a bareboat agreement, MSC becomes responsible for managing, navigating, crewing, provisioning, and maintaining the vessel. This can be accomplished through the use of civil service crews; i.e., mariners employed by the Government. An alternative for MSC is to contract with a commercial shipping company to operate the vessel on behalf of the Navy. This type of agreement is called a ship operating contract and the contractor becomes responsible for the operation of the vessel. The contractor must provide crews and stores and manage the operation of the vessel. For doing so, the shipping company is paid a per diem rate by MSC. The command also establishes lift requirements and orders diversion of a ship if that becomes necessary.

Many of the tankers under command bareboat charter were built through a "build and charter" program sponsored by MSC. Because commercial availability of small tankers is limited, consortiums of financial institutions offered to build vessels under specifications tailored to MSC needs if MSC would obligate itself to long-term charter of the vessels once the vessels had been constructed.

MSC thus was able to use Navy industrial fund dollars for long-term bareboat charters and to secure replacements, built to commercial standards, for its controlled tanker fleet. Such a program has been advantageous to shipyards, vessel owners, and MSC. Shipyards receive much-needed work. Owners take advantage of a tax shelter available through investment tax credits and liberal depreciation allowances applicable to shipping assets. Most important to MSC, it has the use of tankers that probably would not have been constructed as part of the Navy ship construction program where MSC would have competed against combatant ships for funding.

CONTRACTS OF AFFREIGHTMENT

A contract of affreightment provides for sealift an agreed-upon volume of cargo, usually petroleum products, between ports within a certain period of time. The shipowner does not name a particular vessel to fulfill the requirement, but simply agrees to deliver the cargo using vessels from his or her fleet. The owner must, however, meet any physical limitations stemming from the characteristics of the loading and discharge ports. The contract establishes volume of cargo to be moved, describes the cargo, lists loading and discharge ports, defines pumping capacity required of the vessel's cargo system, and sets the time frame within which cargo must be delivered.

This type of contract often is less expensive for a charterer since the owner can use underutilized ships already in his or her fleet. Vessels designated to carry the cargo are usually those returning on a ballast leg from a previous voyage.

As with the voyage charter, revenue is earned on the basis of cargo delivered and is expressed in currency per ton, payable on completion of a successful discharge.

SPECIAL GOVERNMENT CLAUSES

As mentioned earlier, MSC must combine routine commercial maritime practice with procurement requirements imposed by statute and regulation. When chartering or contracting for the full use of a ship, MSC generally negotiates time, voyage, bareboat, or towage contracts. There are, however, a number of clauses or provisions that must be included, by law, in every Government contract. Even if these standard clauses are omitted from the written contract, the courts or an administrative body reviewing the contract will automatically read the omitted clause into the contract. Equal opportunity provisions are a part of every contract.

The most important standard clause in any Government contract is the disputes clause. This clause permits a contractor who disagrees with an interpretation of a contract held by the Government, or who has any other claim against the Government under the contract, to seek an appropriate remedy.

This process is initiated by the contractor through the submission of a written claim to the contracting officer. The contracting officer must review the contract and the relevant facts. A final decision based upon objective analysis of the claim is rendered by the contracting officer. The officer either approves or disapproves the claim. If a contractor disagrees with a decision, he or she may appeal to the Armed Services Board of Contract Appeals (ASBCA), which has statutory authority to review decisions of all contracting officers within the Department of Defense. A contractor also has the option of appealing directly to the United States Court of Claims or a Federal district court, depending upon the type of contract involved. A contractor must, however, continue to perform as the contract requires while the dispute is being resolved.

Disputes under MSC contracts involve a variety of issues and claims. The most frequent type of claim submitted by shipowners involves vessel damage incurred either during loading or discharging operations, or while docking at a port to which the vessel is sent. Other frequent claims are those for ship off-hire and demurrage. Claims can be as varied and as numerous as there are provisions in the contract. MSC personnel in or near ports at which MSC controlled ships call are often required to collect information about vessel incidents. That information helps MSC contracting officers to make reasonable and factual determinations. Data provided by the field often is critical in litigation and in defending against spurious claims.

The most frequent type of claim stemming from an MSC contract with a shipyard or repair facility is that for increased costs of the work performed. It has become almost standard in the ship construction and repair industry to make a claim for increased costs, and this has become a major problem for Government procurement officials. To help assure that claims are precluded, and that data needed to defend against a claim are available, MSC assigns construction representatives (CONREPs) to yards where MSC ships are being worked on. The CONREP monitors the work to ensure that it follows contract specifications and requirements. The CONREP also serves as the eyes and ears of the command in the gathering of data that may be needed to protect command interests.

Procurement within MSC is primarily centralized although the area commands can enter into contracts with industry for the repair and maintenance of ships they control. However, contracts for work that affect a class of ships are handled at the headquarters level, as is work that will extend beyond a 30- to 45-day period. Generally, the scope and complexity of a procurement action as well as the cost are considered in determining whether it will be performed by a ship operating area command or headquarters. Procurement of ships or shipping services is always accomplished at the headquarters level. Area command procurement authority is limited, subject to review by headquarters, and usually is confined to situations where requirements involve only routine operational functions of the area command involved.

SUMMARY

Procurement of ships, shipping services, ship repairs, and maintenance or overhaul services is a vitally important function of the Military Sealift Command (table 10-2). Since MSC relies heavily on industry, the command must be capable of operating within the maritime industry. MSC policies are established by U.S. law and by Federal regulation, but its actions must follow established industry practices if the command is to be able to fulfill immediate and often unanticipated national security needs.

Thus, ship charters that MSC enters into are comparable to those prevailing in the industry.

Table 10-2.—MSC Procurement

- CONTAINER AGREEMENTS
- SHIPPING AGREEMENTS
- SHIPPING CONTRACTS
- CHARTERS
- BUILD & CHARTER
- SHIP HUSBANDING
- RESEARCH/SPECIAL PURPOSE SHIPS
- SYSTEMS CONTRACTS

In its relationships with the shipbuilding and ship repair industry, the command adheres to industry practice. The net result is that a procurement specialist employed by the command has a dual responsibility; to be totally familiar with Federal procurement policies and regulations and to be equally familiar with practices and current conditions within the maritime industry. To understand MSC and its many roles, a student of MSC must be familiar with MSC procurement practices as well as with MSC ship operations. The two functions are essential to MSC's capability to fulfill its sealift, fleet support, scientific support, and readiness missions.

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- SHIPPING [illegible]
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- [illegible]
- [illegible]
- [illegible] TRUST [illegible]
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CHAPTER 11

FINANCIAL MANAGEMENT

Military Sealift Command, a unique Navy organization because of the type and scope of its operations, also is unique in the way it is financed. MSC operations are financed mainly through the Navy Industrial Fund rather than by annual congressional appropriations, as are other Navy operating forces.

Under the industrial fund concept, Military Sealift Command operates somewhat like a private business corporation. Money to pay command expenses is obtained by billing users of Military Sealift Command services. The major difference between an industrially funded organization and a private corporation is that the industrially funded organization sets its billing rates to break even over a period of time, rather than striving for profits as private concerns do. The ultimate objective under industrial fund operation is zero profit or loss.

Financial management functions for which MSC is responsible under the Navy Industrial Fund include budgeting, accounting, disbursing, reporting, and reviewing of financial matters. Financial management impacts on all areas of command operations. Conversely, however, operational activities also have an impact on financial management. A change in mission emphasis often requires a commensurate shift in financial resources allocated for fulfillment of MSC operational responsibilities.

NAVY INDUSTRIAL FUND

The Navy Industrial Fund is authorized under Section 405 of the National Security Act of 1947, as amended. The Security Act established a consolidated working capital fund in each military department. These funds originally comprised monies made available from appropriated funds not returned to the United States Treasury and by capitalization of inventory on hand at the command's inception. The use of the industrial fund provides for businesslike management and financing of operations in commercial or industrial types of government activities. Military Sealift Command has the flexibility to expand or cut back its personnel or ship resources as workload demands fluctuate. Another advantage of the industrial fund is consolidation of sealift operations and fiscal responsibility under single management. Buyer-seller relationships between Military Sealift Command and the user of its services are promoted by the industrial fund concept as is efficient command use of facilities and inventories.

Whenever working capital in the fund drops to a point where debts cannot be paid, additional working capital can be drawn by MSC from the Navy Industrial Fund, which in turn can draw on the Department of Defense Industrial Fund. Should these funds be insufficient, the Secretary of Defense can request Congress to authorize an additional appropriation.

MSC AND THE NAVY INDUSTRIAL FUND

The Navy Industrial Fund, under which Military Sealift Command is chartered to operate, is essentially a single revolving fund. MSC expenditures from the fund are ultimately reflected as charges to appropriations through billings for services provided other Defense Department components or Government agencies outside the Department of Defense.

The Comptroller of the Navy is the custodian of the Navy Industrial Fund. Military Sealift Command received a cash allocation of $100 million when it began operation under the industrial fund in 1951. An additional $22 million was made available in the form of the value of inventories of shoreside stock items and commercial value of items aboard MSC ships (i.e., bunkers, consumable supplies, bedding, tableware, and repair parts). After deducting the liabilities MSC assumed (i.e., annual leave) at the inception of industrial fund operation, the command had a working capital of approximately $113 million.

Subsequently, it became evident that the amount of cash allocated exceeded MSC needs. Periodically, MSC returned funds to the Comptroller of the Navy. As of the end of FY 1982, MSC's cash allocation amounted to $4 million. There have been occasions, however, when additional cash was advanced to MSC from the Navy Industrial Fund corpus. That was the case during the Suez crisis, the Arab oil embargo of 1973-74, and the Vietnam buildup. However, the MSC cash allocation never has exceeded the original $100 million advance.

As noted, MSC recovers its cost of operation from the military shippers and agencies who use command services. Most requirements for sealift of dry cargo, petroleum, oil and lubricants (POL), and manning and operation of MSC Controlled Fleet ships are received from Defense Department agencies, although MSC does provide services for non-Defense Department agencies. Shipments of oil under the Strategic Petroleum Reserve Program of the Department of Energy, support of NATO, and shipments for the Agency for International Development are examples of services provided to non-Defense agencies. Requirements for these services are channeled to MSC through the Defense Department. Services provided by MSC are billed to the agency requesting the service. (See figure 11-1, showing the industrial fund concept as it applies to MSC.)

MSC billings are based on rates established when each new command budget is approved. Billing rates are designed to recover the overall cost of MSC mission-related services during peacetime operation. It is Defense Department and Navy policy that MSC neither realize a profit nor sustain a loss over the long term. However, since the tariff structure cannot be changed without Defense Department approval, billings in some fiscal years exceed expenses, while in other years costs exceed billings. (See table 11-1.) Factors that could cause such an impact are rapidly rising energy costs or major changes in cargo delivery requirements.

AUTHORIZED COSTS

Under Navy Industrial Fund guidelines, MSC can incur costs only for the purchase of goods and services directly related to the performance of MSC's missions. These include, but are not limited to, civilian payrolls, travel expenses (excluding military PCS travel) of both civilian and military personnel assigned to MSC, and the cost of materials, supplies and provisions. Other authorized costs are those for services of various kinds; for ship charter hire, maintenance, and

Table 11-1.—Payments to Commercial Operators

FY	PAYMENTS	% OF TOTAL MSC COST
52	$ 397.4 (Million)	62
60	265.9 (Million)	74
69	1,118.8 (Million)	88
79	817.0 (Million)	80
81	1,334.6 (Million)	78
82	1,433.0 (Million)	77

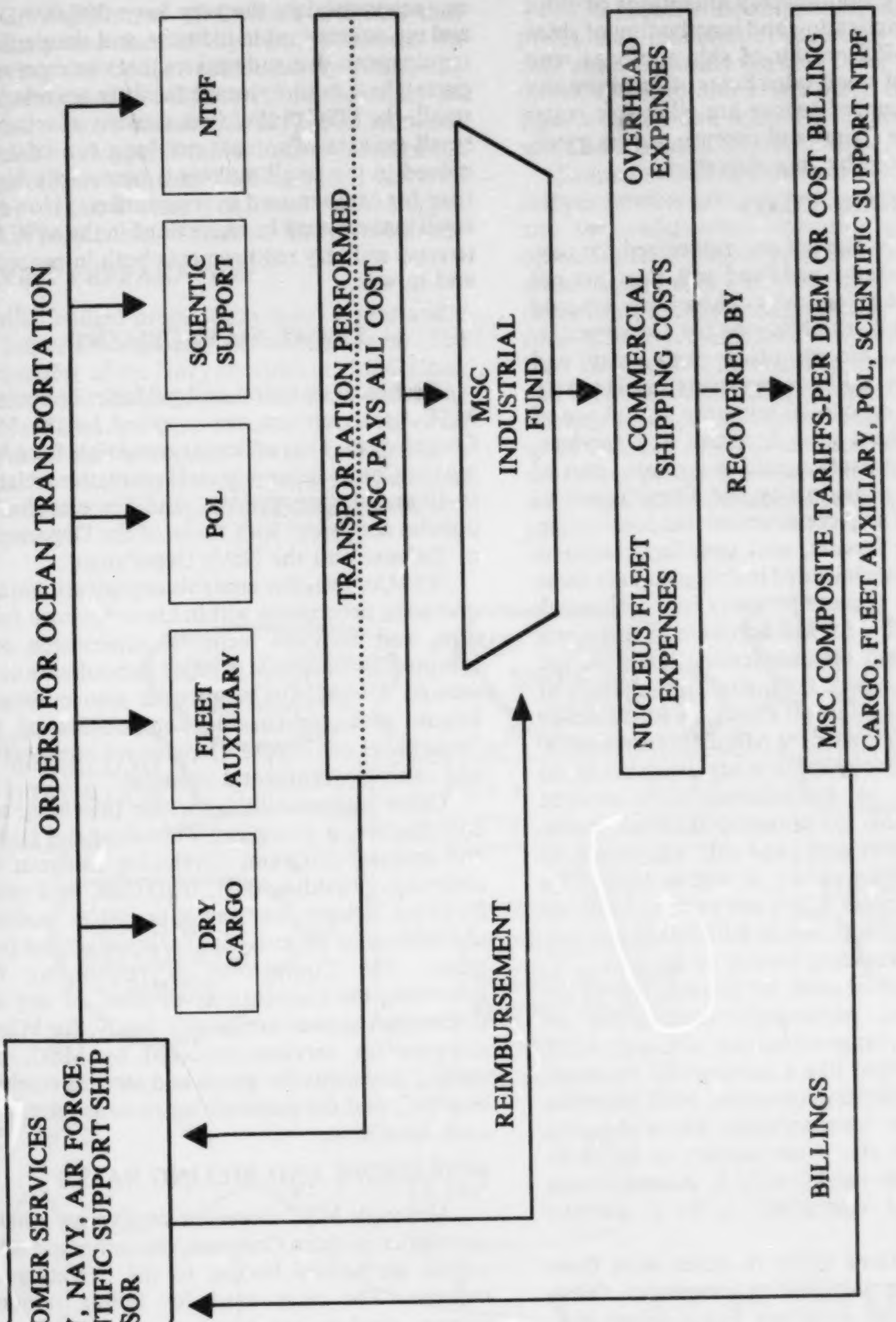
CUSTOMER SERVICES
ARMY, NAVY, AIR FORCE, SCIENTIFIC SUPPORT SHIP SPONSOR
ORDERS FOR OCEAN TRANSPORTATION
DRY CARGO
FLEET AUXILIARY
POL
SCIENTIC SUPPORT
NTPF
TRANSPORTATION PERFORMED
MSC PAYS ALL COST
MSC INDUSTRIAL FUND
NUCLEUS FLEET EXPENSES
COMMERCIAL SHIPPING COSTS
OVERHEAD EXPENSES
REIMBURSEMENT
RECOVERED BY
MSC COMPOSITE TARIFFS-PER DIEM OR COST BILLING
CARGO, FLEET AUXILIARY, POL, SCIENTIFIC SUPPORT NTPF
BILLINGS

Figure 11-1.—Industrial fund concept.

repair; and for non-military alterations of ships or facilities. Activation and inactivation of ships assigned to MSC, repair of ship equipage, and replacement of small value items of furniture and equipment required ashore are allowable costs; so are damage claims and operating costs generally encountered by ship operators.

UNAUTHORIZED COSTS

Some MSC costs are not authorized for payment from the industrial fund and, thus, are not reflected in the billing rates. These costs are paid by other units of the Navy or the Government. They include, among other costs, pay and allowances for military personnel assigned to MSC, interest on capital investments and use of U.S. Government port facilities and services, disability compensation paid to civilians, cost of legal services provided by the Department of Justice, cost of ship construction and conversion, battle damage repairs, and specified readiness costs. Other costs included in this group are those for acquisition of plant property for contingency related functions, for the purchase of ships, use of Army or Navy communication facilities, use of small harbor craft belonging to the Army or Navy, and most technical assistance furnished by the Navy, Coast Guard, or Maritime Administration. Some office space is made available at no cost to MSC, as are administrative services provided by other govermental agencies, armament, amphibious gear, and ship equipment of a primarily military nature, as well as degaussing systems and services. Costs not paid by MSC are funded from appropriations authorized by Congress for the providing service or agency.

The existence of costs not payable out of the industrial fund, particularly contingency or readiness costs, emphasizes that although MSC operates somewhat like a commercial business, it is, in fact, a military command. MSC provides peacetime ocean transportation like a shipping company but it also must prepare to fulfill its ultimate mission—sealift of U.S. Armed Forces deployed in an emergency or in a wartime situation.

MSC operations differ in other ways from those of commercial shipping companies. Oilers in the Navy Fleet Auxiliary Force refuel U.S. Navy and Allied combatants while under way. Scientific support operations also are unique. Since only a small percentage of the world's ports can accommodate the very large 300,000 DWT and up tankers used in industry, and since military requirements demand tankers that can enter small ports where ashore storage facilities are relatively small, the MSC tanker fleet consists of relatively small tankers. The cost per long ton of cargo moved in the small tankers is necessarily higher than for cargo moved in supertankers. However, small tankers must be maintained in the MSC fleet to meet military requirements both in peacetime and in war.

FISCAL MANAGEMENT

Technical direction and guidance concerning MSC fiscal matters are supplied by the MSC Comptroller. That office is responsible for advising the Commander and staff on matters relating to financial management, and for establishing policies consistent with those of the Department of Defense and the Navy Department.

The Comptroller controls organizational and operating procedures within his or her own function, and exercises technical supervision over comptroller functions at MSC subordinate commands. The MSC Comptroller also maintains liaison with comparable components of the Department of Defense, Department of the Navy, and other governmental agencies.

Other responsibilities include providing and coordinating a command-wide financial review and analysis program; developing budgets; accounting; providing cost, workload, and other financial reports; and the appropriate analyses and evaluation of such data for management purposes. The Comptroller is responsible for informing the Commander of MSC of any activities that appear excessively costly, for billing shippers for services rendered by MSC, for making payments for goods and services received by MSC, and for maintaining records related to such functions.

BUDGETING AND BILLING RATES

Although MSC does not receive an annual appropriation from Congress, the command must submit an annual budget to the Secretary of Defense. The rates used for billing military shipper services are based on the anticipated workload, for example, on service sealift requirements. Cost data incorporated in annual MSC budgets are part of the estimated transportation cost of Department of Defense activities that ultimately are funded by appropriations. In reviewing the budget submitted by MSC, the Comptroller of the Office of the Secretary of Defense seeks to ensure that sealift cost estimates included by shippers in their budget submissions are consistent with MSC billing rates, and that MSC workload data conforms with shipper services projections of their sealift requirements.

BUDGET PREPARATION

MSC budget preparation starts a year and a half before the beginning of each fiscal year. The Comptroller of the Navy provides the MSC Commander with the basic premises upon which the next year's budget is to be based, sets a schedule for submission of various reports, and forwards special instructions received from the Department of Defense or the Office of Management and Budget.

MSC requests the shipper services to submit preliminary estimates of dry cargo and POL lift requirements during the next fiscal year, broken down by route and commodity classification. Fleet auxiliary and scientific support ship sponsors also are asked to project their requirements.

Estimated lift requirements submitted by the shipper services are reviewed by the Comptroller and by headquarters operating divisions. An operating force plan is prepared that establishes means and methods of fulfilling shipper service requirements. Supporting detail for the operating force plan specifies how much MSC Controlled Fleet shipping will be available, in what locations, and when. It also contains proposed methods of meeting lift requirements that exceed the capability of the MSC Controlled Fleet; for example, by chartering privately owned ships or by shipping additional cargo on scheduled liners. (See figure 11-2.)

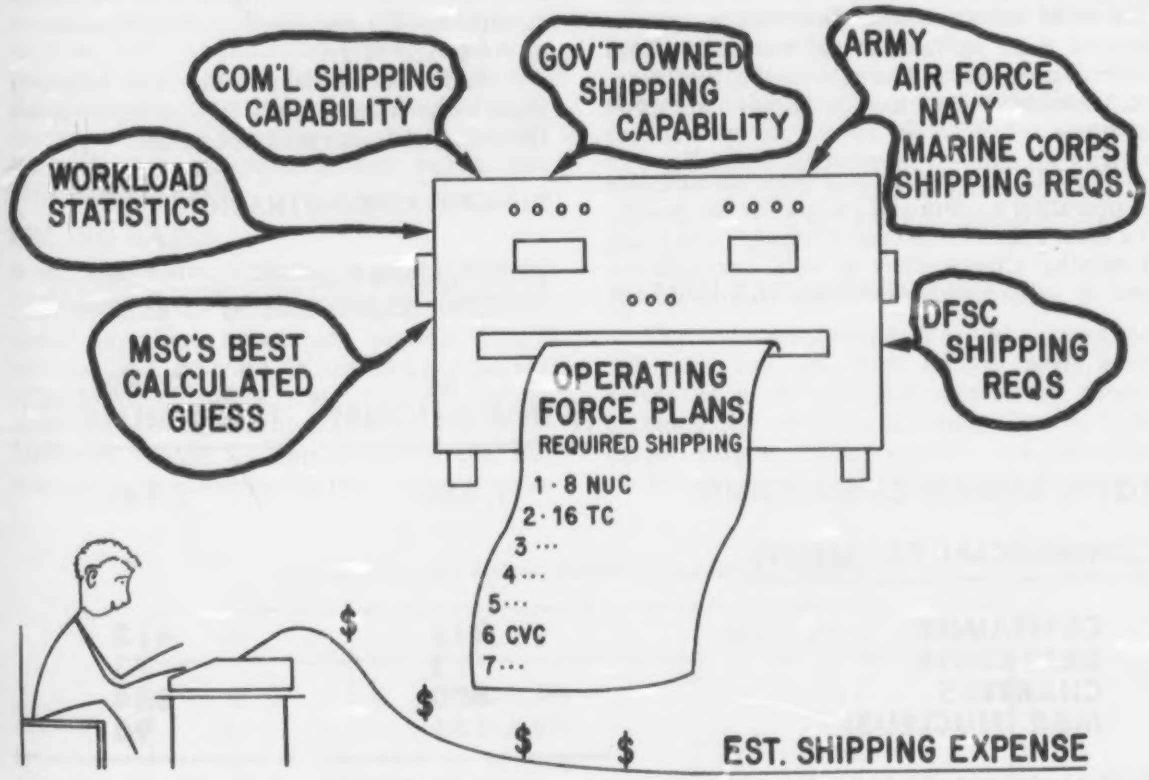
COM'L SHIPPING CAPABILITY
GOV'T OWNED SHIPPING CAPABILITY
ARMY AIR FORCE NAVY MARINE CORPS SHIPPING REQS.
WORKLOAD STATISTICS
MSC'S BEST CALCULATED GUESS
DFSC SHIPPING REQS
OPERATING FORCE PLANS
REQUIRED SHIPPING
1·8 NUC
2·16 TC
3···
4···
5···
6 CVC
7···
$
$
$
$
EST. SHIPPING EXPENSE

Figure 11-2.—Development of plans and shipping expense.

Concurrently with development of an MSC operating force plan, subordinate commands estimate their overhead and nucleus fleet ship operating expenses; each is broken down by applicable account. The estimates of overhead expenses for nucleus fleet ships are submitted to MSC both by ship and by account. All estimates are supported by a detailed explanation of significant variations from either actual expenses or prior budgets.

Estimates for ship alterations, repairs, and inactivation costs applicable to nucleus fleet ships are prepared by MSC area commands and approved by MSC headquarters. Accident and damage reserve estimates are developed at headquarters level.

Also prepared by MSC headquarters are estimates of the cost of acquiring additional ships or service from private carriers needed to meet lift requirements projected by the shipper services. (See table 11-1.) Estimated cost of maintenance and repair items and other direct operating costs beyond those included in the estimates of the subordinate commands are provided to the Comptroller by MSC Engineering, Supply, and other offices.

The MSC Comptroller reviews all estimates in preparing a command budget for the following fiscal year. That process normally takes about 3 months. Comptrollers at MSC headquarters and at subordinate commands coordinate the preparation of their respective budget estimates, but the MSC Comptroller is responsible for coordinating the overall MSC budget.

After review of all estimates, the MSC Comptroller prepares and submits the MSC budget, through the Navy Comptroller, to the Defense Department Comptroller. (See figure 11-3.) The Defense Department Comptroller and the Office of Management and Budget (OMB) review the projected MSC budget and make necessary adjustments. After those adjustments, the Defense Department approves a final MSC budget.

MSC subordinate commands and the fund administrators at MSC headquarters then are advised of the amounts approved for their use in the next fiscal year.

All components of the budget are reviewed and compared with actual revenues and expenditures on a continuing basis to assure that fund administrators do not exceed fund ceilings assigned to them. The MSC Commander, however, can modify the ceiling levels in certain circumstances. He also can authorize expenditures above budget targets.

The MSC budget is, in reality, a management guide rather than a constraint on management flexibility and command operations.

BUDGET ADMINISTRATION

MSC budget administration has three objectives—to assure that money is available to

	FY 81 ($ IN MILLIONS)	FY 82 ($ IN MILLIONS)
TOTAL BUDGET SUBMISSION	1,880	1,951
COMMERCIAL PAYMENTS		
CONTAINER	376	413
BREAKBULK	73	73
CHARTERS	880	884
M&R (NUCLEUS)	136	96
TOTAL COMMERCIAL PAYMENTS	1,465 (78%)	1,466 (75%)

Figure 11-3.—MSC budget.

meet requirements, to minimize operating costs in a manner consistent with overall MSC management objectives, and to provide a means of comparing actual performance with planned operations.

To better administer the MSC budget, funding is separated into several categories of expenses. Included are overhead, cargo ships, tankers, and fleet auxiliary and scientific support ships (by the sponsoring agency). The budget is further broken down, and funds are allocated to specific fund administrators in accordance with their technical functions—e.g., maintenance and repair, overtime control, supplies, etc. Normally, requests for the approval of budget increases and decreases are submitted to the MSC Commander on the basis of 3 to 6 months' actual experience. This allows valid and reliable analysis of trends during the balance of the fiscal year.

Comptrollers at each MSC subordinate command must keep the MSC Commander advised as to the balance of budgeting funds and costs incurred. MSC headquarters provides and controls funds held in reserve for claims, accident and damage repairs, extraordinary repairs, and deactivation of ships. These reserves, as well as funds set aside for maintenance and repair, are reevaluated annually.

BILLING RATES

The MSC Comptroller also develops billing rates designed to produce revenue needed to match expenses. Imbalances between actual revenues and expenses in any single year are adjusted in subsequent years. Billing rates are established for another fiscal year so that MSC customers funded by appropriations can use standard rates in monitoring their transportation costs. Unanticipated increases in MSC billing rates would require either adjustments by the military services in those programs funded by appropriations to avoid overexpenditure, or requests for additional funds from Congress.

MSC billing rates for point-to-point delivery of dry cargo and petroleum are based on lift requirements incorporated into the annual command budget. The rates are applied regardless of whether nucleus or chartered fleet ships or berth-term shipping is used. Separate billing rates, however, are established for services provided by fleet auxiliary and scientific support ships, and for pre-positioned ships that would support a contingent of Rapid Deployment Force troops.

Costs of operating fleet auxiliary and scientific support ships are billed to the organization they support through established ship per diem rates. Differences between actual MSC revenue and the expense of operating fleet auxiliary and scientific support ships are incorporated into subsequent year billing rates so that MSC will break even over the long term.

Subsequent to approval of an annual MSC budget, schedules of billing rates and instructions for their application are submitted for approval to the Defense Department through the Comptroller of the Navy. After such approval, the MSC Comptroller arranges for publication of the rates and instructions.

BILLING RATE SCHEDULES

Dry cargo rates, based on a measurement ton (40 cubic feet) of cargo moved, cover such categories as general and special dry cargo, ammunition, refrigerated cargo, aircraft, bulk cargo, cargo-carrying trailers, and privately owned vehicles. (See table 11-2.) Rates are

Table 11-2.—Dry Cargoes Carried by Commercial Carriers

FY	M/T's	% OF TOTAL M/T's
52	23,232,343	83
65	6,898,850	64
69	21,517,961	70
79	7,642,149	95
81	7,082,641	97
82	7,521,566	96

published for carriage of each commodity within and between established traffic areas worldwide.

Billing rates for the point-to-point lift of POL products vary, depending on tanker size and whether multi-port loading or discharge is involved. (See table 11-3.) As with dry cargo, rates per long ton of cargo are published for delivery within and between designated traffic areas worldwide.

Per diem rates for various types of ships also are published by MSC or are furnished on request. They are used when point-to-point billing is not appropriate. Examples of such rates might be for ships engaged in non-lift operations, such as amphibious training or used for floating storage, or when the nature of a lift operation precludes use of an MSC controlled ship for other revenue-generating operations. Services of fleet auxiliary, scientific support, and pre-positioned ships also are billed at per diem rates.

ACCOUNTING PROCEDURES

Under the Navy Industrial Fund accounting system, MSC cost and revenue are recorded on an accrual basis. The system parallels that followed by steamship companies with one major difference—MSC maintains its accounts on a monthly rather than on a voyage basis.

There are certain advantages to the accrual accounting system used by MSC that are not gained in the obligation-expenditure system that is generally followed for appropriated fund accounting. Accrual accounting is a method of keeping accounts to show expenses incurred and revenues earned for a given period, even if such expenses and revenues are not paid or received during that period. An example might better explain how accrual accounting works.

Assume an activity leases a building for 1 year for $12,000, payable at the rate of $3,000 at the beginning of each quarter. With appropriation accounting, an obligation of $12,000 would be set up at the time the lease was signed and an expenditure of $3,000 would be entered at the time of each payment, with a corresponding reduction in the amount of the obligation. At any time during the year, the combined obligation and expenditure would total $12,000.

Under the accrual system, although the lease calls for a payment of $3,000 in advance each quarter, operations for each month throughout the year would be charged $1,000. Thus, at the end of 5 months the total expense would be $5,000, and the amount of $1,000 (the difference between the total $6,000 already paid and the $5,000 charged to expense) would be shown on the books as a prepaid expense.

Management, thus, is provided precise knowledge of costs incurred and revenues earned for specific periods in which services were provided, rather than when ordered and paid for. Accrual accounting generally is considered to be more realistic and more accurate. It also provides cost information to management not otherwise available.

MATERIALS AND SUPPLIES

Repair and equipment replacement materials for MSC ships are obtained by MSC directly from private industry through Navy channels. The price

Table 11-3.—Petroleum Carried by Commercial Carriers

FY	L/T's	% OF TOTAL L/T's
52	3,238,773	22
60	7,545,701	52
69	18,339,501	72
79	12,983,480	86
81	14,125,448	85
82	15,537,533	86

paid includes the purchase or production costs of the procured items and the first-destination transportation cost.

Authorized machinery or equipment requested by a shipper service or ship sponsor for use on an MSC controlled ship may be financed from the industrial fund for subsequent recovery as a cost. Equipment acquired specifically to fill a shipper service or sponsor requirement is funded by, and is the property of, that service or sponsor. It is disposed of under instructions provided by the shipper service or sponsor.

PERFORMANCE REPORTING AND ANALYSIS

Analysis of MSC performance provides management with timely and effective administrative controls. In this context, the term "control" is used to mean the use of statistical and analytical reports regularly submitted to assure effective and economical employment of facilities and manpower. Evaluation of those reports allows managers to keep a finger on the MSC pulse.

Statistical data for dry cargo and POL lifts are accumulated and summarized at MSC headquarters. Information concerning utilization of ships under per diem or other special billing arrangement (e.g., scientific support ships, commercial towing contracts, and the like) is accumulated by the comptrollers of subordinate commands. A description of the data compiled is contained in the current edition of COMSCINST 7720.1. A good example is COMSC Report 7700.2, Management Report.

BILLING

Using data from cargo manifests and tanker voyages, MSC headquarters introduces into its data processing system the information necessary to identify point-to-point shipments. Each shipment is priced out at the point-to-point rates established in the budget process, taking into consideration factors such as commodity category and unused space in tankers and cargo containers. Billings for MSC ships provided on a per diem basis are computed from published MSC billing rates or, in the absence of published rates, from rates agreed to in advance.

Monthly MSC bills are prepared by computer. Each bill is segmented into three types of charges: dry cargo, petroleum, and ship per diem costs. Charges for each type of service are substantiated by an itemized account describing each lift and totaling the cost to the billed agency.

MSC sends bills to about 50 activities that range from the military services (Army, Navy) to small shippers like the Panama Canal Commission or the Agency for International Development. Transportation bills may include, in addition to routine traffic charges, the cost of unusual employment of MSC controlled ships. Typical are those used in amphibious assault operations, the carriage of art treasures, fleet maneuvers, or refugee evacuations.

DISBURSING

Responsibility for receipt, disbursement, and custody of MSC funds, and the keeping of appropriate accounts is vested in either a shore-based disbursing officer or a deputy disbursing officer-purser at sea. Their duties are described in volume IV of the *NAVCOMPT Manual*.

When disbursing services are needed aboard an inservice ship, the ship's purser is designated a deputy disbursing officer-purser. As a bonded member of the crew appointed by the disbursing officer at the home port of the ship, the purser is authorized to perform all financial transactions aboard ship. He or she can sign checks drawn on the disbursing officer's checking account with the Treasurer of the United States in the name of, and for the account of, the ashore disbursing officer. The purser is personally responsible for the expenditure of funds he or she controls. The purser must maintain detailed accounts of all activities for examination by the disbursing officer ashore; and must forward balance sheets and supporting documents for consolidation with the ashore disbursing officer's financial returns.

Shipboard disbursing functions generally are limited to payment of civil service payrolls, issuing checks in exchange for cash, and paying for emergency supplies or services purchased outside the continental United States. Receipts collected aboard ship consist, for the most part, of payments for subsistence by non-crew personnel.

MSC civil service marine employees are paid aboard ship, unless there is no deputy disbursing officer-purser aboard. Crew lists, individual earning records, and basic mariner payroll records are prepared and maintained ashore.

Before a ship departs its homeport, the ship's purser receives time and attendance cards from the shore command. They are grouped by shipboard departments and by pay periods. During a typical voyage, the purser computes each employee's pay, enters the earnings, deductions, and net pay figures on the time and attendance cards, and pays the employee. Checks for payroll allotments deducted from shipboard payrolls are prepared by and mailed directly from the home port disbursing office.

MSC shore activities generally pay the cost of shipments made under Government Bills of Lading (GBL), as well as general claims. Since MSC must collect shortage and damage claims resulting from ocean shipments, receipt of such funds from commercial carriers and their distribution also are handled by shore-based disbursing officers.

The Navy Finance Center in Washington, D.C., is the only other naval activity in the continental United States authorized to pay the cost of MSC booked or shipped cargo moving under GBLs and to collect for in-transit loss or damage to Government property.

FINANCIAL SYSTEMS AND ANALYSIS

The Comptroller's Office is responsible for evaluating, developing, and implementing financial data systems, with the objective of increasing the quality and timeliness of management reports. Additionally, special studies and nonroutine analyses are performed for other offices.

Volume 5 of the Navy Comptroller manual provides accounting and financial management guidance for industrially funded organizations. The MSC Comptroller recommends changes to the handbook that may be required either as a result of inspections or reviews, or because of changes in policy.

An additional comptroller function is MSC liaison with the General Accounting Office, the DOD Assistant Inspector General for Audit (AIG (A)), the Naval Audit Service, and other Government agencies involved in audits, surveys, and special studies that impact on MSC. The MSC Comptroller develops MSC replies to external management reports, considers the effects of their recommendations on MSC policies, procedures, and controls, and initiates and monitors actions to correct deficiencies.

INTERNAL REVIEW

The MSC Comptroller directs a commandwide internal review program. Representatives of the Comptroller's Office conduct internal reviews at headquarters and subordinate commands and take part in periodic field inspections and special assignments. The internal review program provides to the Commander of MSC a means of assuring that funds, personnel, equipment, and other resources are used effectively, securely, economically, and within legal and administrative constraints.

MSC REPORTS TO HIGHER HEADQUARTERS

Most private sector corporations make annual reports to their stockholders. MSC has a similar responsibility. MSC stockholders, the American taxpayers, are represented by the civilian executives in Defense Department managerial posts and by the CNO. To keep both higher headquarters and MSC customers informed as to how the command manages its operations, the MSC Comptroller prepares quarterly and annual reports, highlighting MSC operations for each quarter and year. All staff offices submit material and information for the report; the Comptroller provides statistical and financial data. The reports are forwarded to the Assistant Secretary of Defense Comptroller through normal channels, and copies are made available to all agencies MSC serves.

In addition, a board of advisors meets periodically with the MSC Commander to review past operations, future plans, and current or long-term problems. Included on the MSC Advisory Board are the Assistant Secretary of the Navy for Shipbuilding and Logistics, the Assistant Secretary of the Navy for Financial Management, the Deputy Chief of Naval Operations for Logistics, and the MSC Commander. The command Comptroller also attends the periodically scheduled meetings of the advisory board.

CHAPTER 12

SEALIFT READINESS

In his fiscal year 1982 posture statement to the Congress of the United States, the Secretary of Defense listed four vital elements of military capability. They were an adequate force structure, continuing modernization of equipment U.S. forces rely on, the ability to support and sustain military forces over the period of time needed to win, and readiness.

He defined readiness as the ability to deploy and employ U.S. military forces effectively without unacceptable delay. Contrary to often heard views of those who doubt the United States ability to deploy and support its military forces, the Secretary of Defense told Congress that the United States has "the greatest ability of any nation on earth to deploy reinforcing forces throughout the world."

However, he put that statement in perspective when he added that United States "objectives are extraordinarily ambitious." "Meeting them," he said, "requires a sizable increase in our mobility capabilities."

Until 1978, the Secretary reported, when an exercise known as Nifty Nugget was held, the Department of Defense (DOD) "lacked a comprehensive plan for coordinating and integrating activities of all Department of Defense organizations in the event of a rapid mobilization." A preliminary version of the master plan that resulted was tested in 1980 with positive results, particularly in strengthening military capability. But threats to world stability were great and much more needed to be done.

This chapter deals with actions designed to improve sealift capability and readiness—in areas such as planning, development of sealift augmentation programs, and improvement of the Naval Reserve structure. Review of those areas provides considerable evidence that the role of sealift in deployment and logistical support of military forces is better understood and that greater attention will be given sealift during the 1980s.

"By the mid-1980s, sealift will dominate our mobility capability." That statement was made in the FY 1982 posture statement of DOD. It was not intended, however, as an assessment of the relative importance of airlift and sealift. "It is recognized," the Secretary said, "that airlift is critical for the immediate deployment of light forces, even critical for intra-theater movement of forces and supplies." What has not been widely recognized is that "most of the projected improvement in strategic mobility will result from sealift programs."

What happened to change the picture? Vice Admiral Kent J. Carroll, then Joint Chiefs of Staff (JCS) director for logistics, or J-4, summarized events that had influenced military planning and resulted in increased attention being paid to sealift when he testified before the Seapower Subcommittee, House Committee on Armed Services, in March 1981.

Admiral Carroll stressed that the United States must possess a mobility network that will enable the timely, rapid, and responsive movement of military forces to, from, and within the overseas theaters. The three main elements of mobility, the mobility triad as he termed it, consist of airlift, sealift, and pre-positioning of equipment. Each complements the other. None can be substituted for another.

The admiral, a leading military logistician, noted that the military establishment had concentrated almost exclusively on the the North Atlantic Treaty Organization (NATO) in Western Europe in its 1970's planning. A NATO scenario or contingency, he said, provided an excellent "worst case" for planners. So they concentrated on it. Planning was based on a "short war" approach—on successfully defending against a massive attack by Warsaw Pact forces. NATO emphasis thus was on early buildup of combat power.

That required airlift and pre-positioning of military equipment. Ironically, even when the war in Southeast Asia required drawing down NATO pre-positioned supplies and equipment, the planning focus on a NATO war remained unchanged.

Pre-positioning of ammunition, equipment, and supplies; the emphasis on a short war; and reliance on some 400 merchant ships that NATO nations could make available served, in Admiral Carroll's words, "to mask the need for adequate sealift resources."

However, he told the House Seapower Subcommittee, "Our focus shifted to Southwest Asia with the advent of the Iranian crisis and the chaotic situation it engendered." The ability of the United States to project its military power into that part of the world was then very limited, he admitted. Possible options were obviously foreclosed for the nation's decision makers.

Any deployment and support of forces in Southwest Asia would test United States resources, he pointed out, since the distances are staggering—over 8,000 miles from the East Coast via the Suez Canal, and over 12,000 miles around Africa if the canal is closed. Deployment forces across the Pacific would extend the logistics line of communication even further and create serious fuel problems, Admiral Carroll reported.

Aircraft supplying forces in Europe, he pointed out, can fly there, refuel, and return to the United States. Aircraft flying to the Persian Gulf would need to refuel twice on the en route leg and twice on the return leg. To illustrate his point, Admiral Carroll noted that during the 1973 Arab-Israeli war, Military Airlift Command cargo aircraft used 6 tons of fuel for every ton of military cargo delivered to Tel Aviv.

Hundreds of tankers would be needed to support a major airlift, he warned. Few are apt to be available. He cited a recent survey of tankers committed under the Sealift Readiness Program (SRP) for emergency augmentation. Of 21 tankers, only 2 were carrying refined products. The remainder were transporting crude oil, wheat, corn, and other bulk products.

Another factor in contingency planning, Admiral Carroll said, is availability of bases in countries such as Spain, the United Kingdom, Italy, Greece, and Portugal. Because of such nations' dependence on Arab oil, political realities might restrict United States use of their bases. In addition to facing fuel and support base problems, U.S. forces could not rely on pre-positioned equipment and supplies in a Southwest Asia deployment since stocks there are limited or nonexistent.

Asserting "no nation on earth possesses the vast network of airlift that we have in the United States," and noting the effective relationship of the Air Force's Military Airlift Command with the aviation industry, Admiral Carroll cited defense plans to increase U.S. airlift capability. He warned that even with help of the commercial aviation industry, U.S. airlift could deliver only 2,500 tons a day from the continental United States to Southwest Asia. A U.S. mechanized division and its supporting elements require lift of more than 100,000 tons.

"It is painfully evident that airlift alone cannot do the job. Because of this, [DOD has] concentrated [its] plans and programs to increase the contribution of sealift, especially in the early days of a deployment (figure 12-1). Given that one dry cargo ship can deliver the equivalent tonnage of 2 1/2 days of airlift, the first 10 ships to arrive in the Persian Gulf can deliver tonnage approximately equal to a full month of airlift. Accelerating sealift delivery of precious equipment and sustaining supplies can spell the difference between victory and defeat." That warning to Congress was delivered by Admiral Carroll.

Admiral Carroll said he felt that strategic sealift development had been neglected. He also expressed his concern about the decline of the merchant marine which carries less than 5 percent of the U.S. import-export trade.

"It is a sad and sobering fact," he said, "that during World War II twice as many ships were sunk as are in the entire U.S. flag fleet today. So spartan is our merchant marine capability that we cannot meet worldwide projected demands without a massive commitment of Allied sealift resources."

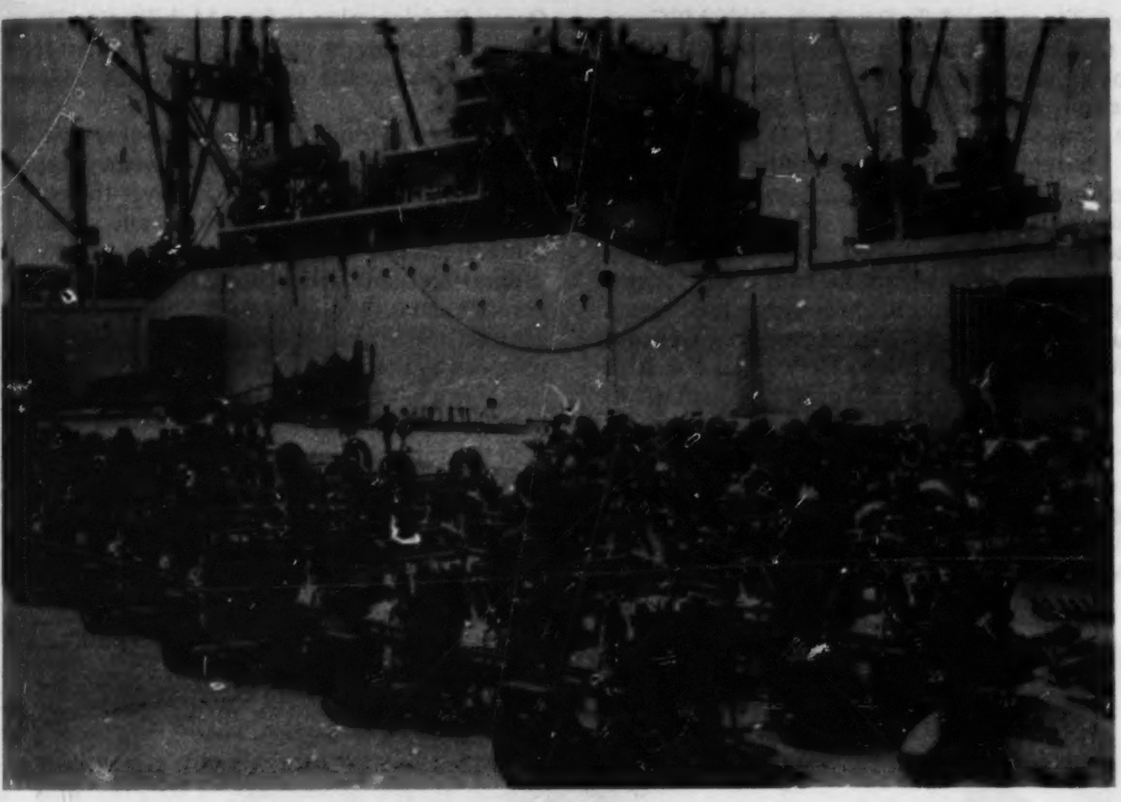

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Figure 12-1.—Jeep trails to be loaded aboard the USNS Meteor.

STRATEGIC MOBILITY PLANNING

That was the picture, from the military viewpoint, only 1 year into the decade of the 1980s. It was not significantly different from previous between-war or between-threat years when U.S. seapower was allowed to deteriorate. Once again, in the face of a threat, programs were initiated to develop the readiness of U.S. forces and to assure mobility of those forces (figure 12-2). As the Navy's single manager operating agency for Department of Defense sealift, Military Sealift Command (MSC) has been involved in much of the effort and all of the programs.

One example is MSC planning. Throughout most of the command's existence, MSC planners were concerned primarily with development of sealift movement tables depicting OPLAN

UNITED STATES NAVY
MILITARY SEALIFT COMMAND

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Figure 12-2.—MSC logo.

feasibility or shortfalls. Emphasis within MSC was on reacting to immediate requirements rather than looking ahead to sealift improvements required to ensure executable operational plans to support the Commander in Chief (CINC) or services.

That changed. Appropriated funding for MSC contingency planning now is provided by the Chief of Naval Operations (CNO) as a part of readiness development. An MSC Strategic Mobility Planning Office was established. Sealift operations research and sealift improvement planning functions programs were assigned to a Concept Development and Analysis Office that was later incorporated into a new Sealift Readiness Office.

Army, Navy, Marine Corps, Air Force, and Coast Guard planners were assigned to the MSC Strategic Mobility Planning Office, which is organized geographically. Establishment of an Atlantic-European Division, a Pacific Division, a Middle East Division, and an African-Indian Ocean Division, along with a Mobilization Plans Division, assures the directing of the highest level of expertise in each potential area for military operations.

Strategic Mobility Office planners remain responsible for development of movement tables supporting each major plan for over-the-ocean delivery of military unit equipment and supplies. But emphasis also is on development of MSC's supporting plans delineating sealift operational requirements in emergencies, contingencies, or general war (figure 12-3). Sealift plans are reviewed by the CINCs just as are the emergency, contingency, and general war plans they support. MSC is directly involved in planning conferences with the Joint Deployment Agency (figure 12-4), a JCS organization established specifically to refine development feasibility of the plans formulated by the CINC, services, Transportation Operating Agencies (TOAs), and other

MSC
EXPANSION
IN TIME
OF WAR

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Figure 12-3.—MCS plan...Be capable of expansion.

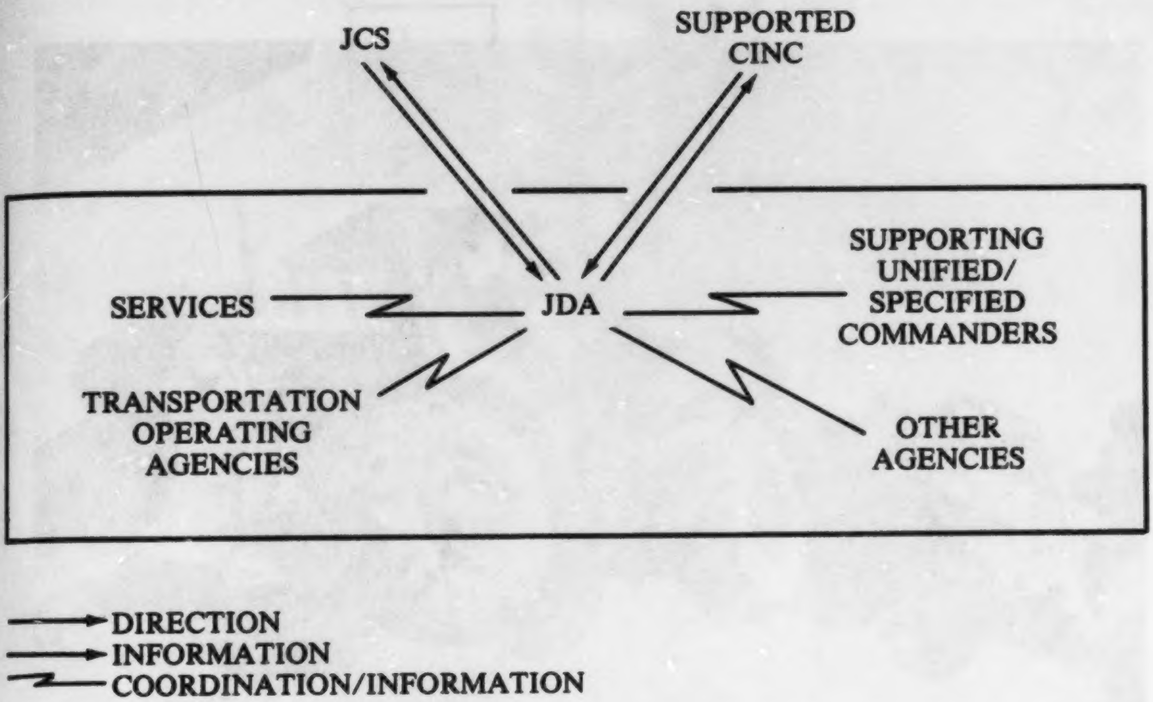

Figure 12-4.—JDA command relationships.

Defense organizations and to coordinate actual deployment of forces during execution.

A primary benefit of MSC's expanded planning role is that command planners can rely both on expertise available in MSC area and subarea commands, and worldwide offices, and on experienced representatives of the military services they support. Both are involved in the command planning process. Commanders of MSC ship operating commands provide input for plans development and, thus, acquire a firsthand familiarity with the nature and scope of emergency requirements that may be levied upon them. The Army, Air Force, Navy, Marine Corps, and Coast Guard reps assigned to MSC help assure effective communication and improved understanding between MSC and the organizations it supports. The result is a higher degree of sealift readiness.

With increased JCS and Defense Department emphasis on readiness and sealift mobility, MSC made organizational changes in its planning function in the early 1980s. At that time, contingency planning was primarily a function of one division that was part of a Plans and Programs Office. The thrust of the contingency planning activity then was on preparation of studies, development of an MSC Logistic Support and Mobilization Plan (LSMP), and, to a limited extent, on preparation of command operational plans in support of those developed by unified commands.

Included were sealift movement tables that concerned the lift of unit equipment (figure 12-5) and the resupply of troops with food, ammunition, and petroleum, oil, and lubricants (POL) for varied scenarios established in plans developed by the CINCs. Most of the detail contained in those products of the plans division was in print format embodied in the movement tables produced by the sealift planning model (SEACOR). The reports generally were voluminous and most of the analytic tasks associated with planning were manual, performed by people working with

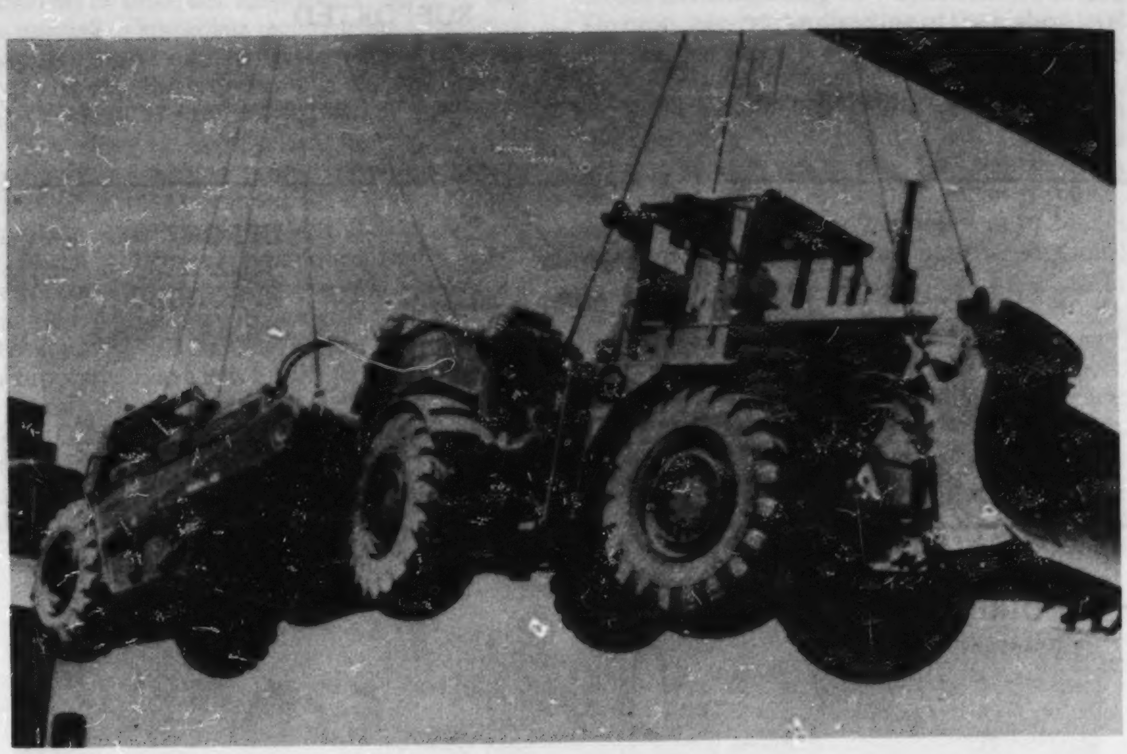

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Figure 12-5.—Road grading equipment being loaded onto an MSC ship.

adding machines and calculators rather than computer systems. Procedures and formats were not standardized throughout the planning community in the 1970s. Each command, including MSC, developed its own formats and established its own procedures.

Beginning in the mid-1970s, however, great emphasis was placed on standardized and systematic approaches to planning, an emphasis that resulted in establishment of the JCS Joint Operation Planning System, often referred to simply as JOPS (figure 12-6). It is JCS approved and its use is required in joint planning. JOPS formalizes and standardizes administrative procedures, data exchange, data storage, and plans formats. Designed primarily for use in contingency planning in which deployment of forces is the main concern, JOPS provides a framework for a planning-community-wide perception of what is going on, how it is being done, and by whom. JOPS establishes an automated data bank and standardized programs for data use, enhances early identification of asset shortfalls, and makes feasibility testing and review of plans easier. It structures the planning process and organizes joint planning into various phases as shown in figure 12-7.

PHASES IN JOINT PLANNING

A command's responsibility begins when a planning responsibility is assigned or generated. It ends only when the mission has been completed. Phases established by JOPS can be categorized as follows:

1. Initiation. The phase in which planning tasks are assigned and available national forces and transportation resources are identified and apportioned.

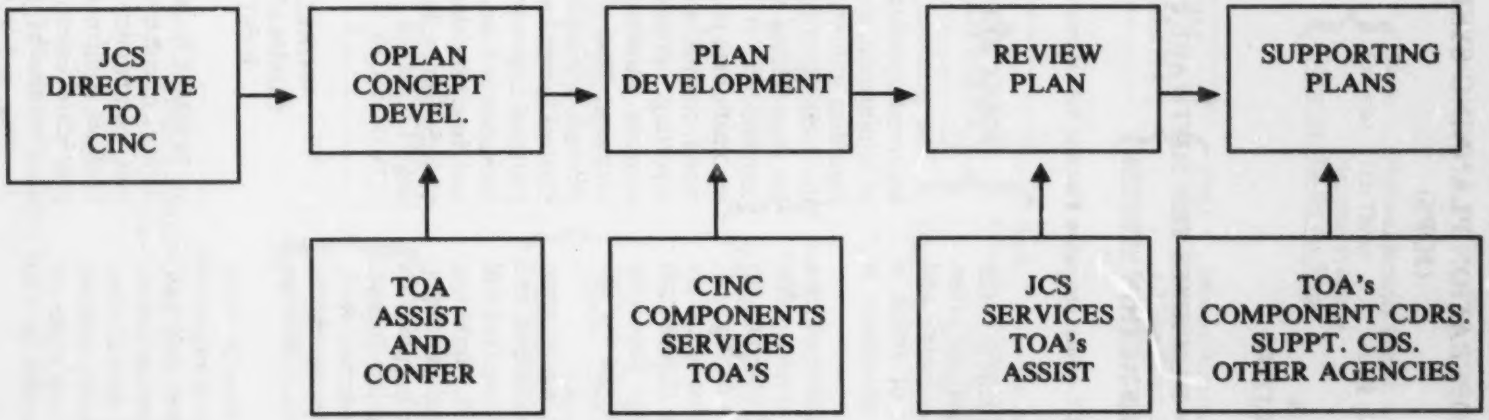
JCS
DIRECTIVE
TO
CINC
OPLAN
CONCEPT
DEVEL.
PLAN
DEVELOPMENT
REVIEW
PLAN
SUPPORTING
PLANS
TOA
ASSIST
AND
CONFER
CINC
COMPONENTS
SERVICES
TOA'S
JCS
SERVICES
TOA's
ASSIST
TOA's
COMPONENT CDRS.
SUPPT. CDS.
OTHER AGENCIES

Figure 12-6.—TOA assistance in Joint Operations Planning System (JOPS).

JOINT OPERATION PLANNING SYSTEM
(JOPS)

JOPS VOLUMES I & II
OUTLINES:
PROCEDURES
RESPONSIBILITIES
FORMATS

JOPS VOLUME III—DESCRIBES THE SOFTWARE JOPS

VOLUME IV—CRISIS ACTION SYSTEM

Figure 12-7.—Joint Operation Planning System manuals.

2. Concept Development. The phase in which all factors having a potentially significant effect on mission accomplishment are collected and analyzed, a recommended course of action is determined, and a concept of operations is developed.

3. Plan Development. The phase in which a force list is structured, resupply and transportation requirements are determined, planning for engineering and medical support is carried out, and time-phased force deployment data are developed. All elements of the plan (figure 12-8) are documented in JOPS or Joint Reporting Structure (JRS) format and submitted for approval at the appropriate level.

4. Refinement. The phase in which components of the plan are assessed, validated, and kept current. Once refinement is completed and the resulting plan is approved by JCS, supporting commands such as MSC are directed to develop supporting plans. Required supporting plans are completed, documented in appropriate format, assessed, and validated at the appropriate level, and kept current by the responsible commander and planning function (i.e., MSC Strategic Mobility Office).

5. Execution Planning. The phase in which a plan or concept is adjusted and/or expanded as required by a prevailing situation, then published in an operational order format so that execution is possible at a designated date or time.

6. Execution. The phase in which military operations are initiated and carried out under the direction and control of those responsible for their execution.

JOINT REPORTING STRUCTURE

The previously mentioned JRS is a JCS-approved reporting system that structures the flow of information, direction, and required responses regarding military operations, and provides for the documentation of such information or data for transmission to, from, and among military commanders. It includes both narrative and automatic data processing formats. JRS is a command, control, and management tool for status reporting, situation monitoring, operational support monitoring, and for operational planning. Data in JRS format are exchanged through a Worldwide Military Command and Control System known as WWMCCS. It provides National Command Authorities (NCAs) with information and data they would need to make valid and timely decisions concerning the employment of U.S. forces, both in peacetime and during a war.

WORLDWIDE MILITARY COMMAND AND CONTROL SYSTEM (WWMCCS)

WWMCCS is a Department of Defense network of command and control systems, a complex communications network. Included are facilities, equipment, personnel, and standardized procedures essential for conveyance of a tremendous volume of data required in the planning, directing, and controlling of worldwide military

PHASE I INITIATION
Basis: National Security Objectives
Criteria: The Threat
National Priorities
Objective: To Set the Stage

PHASE II CONCEPT DEVELOPMENT
Basis: Mission Accomplishment (Forecast Situation)
Criteria: Force and Resource Allocation
All Significant Factors
Objective: Derive the Concept of Operations

PHASE III PLAN DEVELOPMENT
Basis: The Commander's Concept
Criteria: National Force and Resource Allocation (UTC)
Service Planning Factors
Strategic Movement Data
Objective: A Feasible Plan

PHASE IV REVIEW
Basis: The Plan
Criteria: Adequacy, Feasibility, Suitability
The Dynamics of Change
Objective: An Approved Plan

PHASE V SUPPORTING PLANS
Basis: The Approved Plan
Criteria: Service Doctrine
Support Agreements
Objective: A Family of Plans

PHASE VI EXECUTION PLANNING
Basis: JCS ALERT ORDER (The Prevailing Situation)
Criteria: Force and Resource Assets (UTC)
Service Planning Factors
Strategic Movement Data
Objective: OPORD that can be implemented

PHASE VII IMPLEMENTATION
Basis: NCA Decision
Criteria: The Approved OPORD
The Dynamics of Change
Objective: Military Action in the National Interest

Figure 12-8.—Phases in joint planning.

operations. Formatted data assure common understanding and improve dialogue effectiveness among commanders of diverse organizations—combat units, transportation organizations, and those involved with supply or support. Chances of error or faulty perceptions are lessened by the use of a structured and universally accepted system. The system is adaptable to situations requiring a step-up in readiness or to the conduct of general war. By issuing fragmentary instructions, by the use of techniques that ease the flow of selected command and control data, and by precise military requirements and orders, WWMCCS reduces communications time to a minimum. It limits misunderstanding or situations in which needed information is not available.

Among WWMCCS objectives are to supply timely data to assure that decision making is based on full and valid information, and to thus strengthen the timeliness of a military response to a threat to world peace or national security. WWMCCS is intended to provide a means of controlling the commitment and application of military force in support of national goals. It is also intended to help manage the use of resources such as the airlift and sealift assets of MAC and MSC, the two strategic mobility operating forces. WWMCCS is also a means of assuring continuity in military operations.

MSC STRATEGIC MOBILITY OFFICE

As a result of organizational changes, MSC gives readiness planning and readiness force development more attention than in previous years. Assignment of Army, Navy, Air Force, Marine Corps, and Coast Guard personnel to the Strategic Mobility Office helps assure MSC's fulfillment of its responsibilities as the Department of Defense sealift single manager operating agency. Civilian positions were increased and a separate ADP support division created to assure MSC support of JOPS. Planning desks organized along geographical lines assure that every organization MSC supports has a focal point on the MSC planning staff. The appointment of an Army colonel as the first head of MSC's Strategic Mobility (figure 12-9) Office demonstrated MSC's commitment to its primary mission—development of systems, plans, and capability required to support deployment and support of U.S. forces in any contingency.

MSC planners are involved to some degree in almost all of the planning phases, frequently being asked to comment on the concept development phase by the CINCs. In the plans development phase, most work takes place at the unified command. MSC will be required to identify forces it would need to support the operational plan being developed—for example, MSC-sponsored Naval Reserve organizations. Augmentation may be required by individuals needed to fill MSC headquarters and area command or office positions in the United States or overseas. Augmentation could include an entire reserve unit or several units. MSC also would be asked to identify equipment needed to be deployed with support personnel. Equipment specifications generally are available to planners from an Advanced Base Functional Components List published by the Navy.

In the refinement phase of planning, MSC planners attend Time-Phased Force Deployment Data (TPFDD) refinement conferences. Such conferences are conducted by the Joint Deployment

STRATEGIC MOBILITY

"THE COMBINATION OF PEOPLE, EQUIPMENT, PROCEDURES AND PLANS REQUIRED TO MOVE MILITARY FORCES TO ANY PART OF THE WORLD IN RESPONSE TO A SHOOTING WAR, POLITICAL CONTINGENCY OR NATURAL DISASTER"

Figure 12-9.—Strategic mobility definition.

Agency and consist of two phases. A Phase I conference is held to assure that the TPFDD includes force data, non-unit related personnel records, and cargo records, and to make certain that shortfalls are identified and resolved. After a Phase I conference has been completed, the resulting TPFDD is used by MSC and other Transportation Operating Agencies (TOAs) to evaluate the feasibility of transportation plans.

A Phase II conference also is convened by the Joint Deployment Agency. It is scheduled after the transportation operating agencies, MSC, Military Transportation Management Command (MTMC), and Military Airlift Command (MAC) have completed transportation feasibility analyses of the TPFDD. The purpose of each Phase II conference is to resolve transportation capability shortfalls identified by the TOAs.

In the supporting plans phase of joint planning operations, MSC is required to develop supporting plans for CINC operational plans—plans that cover MSC accomplishment of the missions it has been assigned. MSC also is responsible for development and distribution of sealift movement tables as part of its own operational plan. The movement tables provide information concerning the list of material, supplies, and equipment from port of embarkation to ports of debarkation.

During execution, responsibility passes from the MSC Strategic Mobility Office to the MSC Sealift Readiness Office, which is charged with the preparation of an MSC Operation Order (OPORD). All factors having a bearing on the lift requirements developed in executive planning are reviewed and evaluated by the Sealift Readiness Office. That office is responsible for providing sealift feasibility and closure estimates to the CINCs for use in development of plans, courses of action, and their own operation orders. Input is coordinated through JDA.

In the execution phase, MSC units are involved in the positioning of ships for loading and the lift of cargo to the destination called for in the overall planning document.

That does not suggest, however, that planning ends once a plan has been implemented; revisions can continue to be necessary. They may be dictated by changing circumstances or by operational evaluation of the plan itself. In either event, planning and operational personnel will continue to work in close coordination to assure that mission assignments are fulfilled as completely and effectively as possible. No plan is ever so complete that adjustments will not be necessary. As any military person can testify, requirements are ever subject to change.

SEALIFT AUGMENTATION RESOURCES

Concerns faced by the strategic sealift mobility planners have changed substantially, and frequently, during the post-World War II period. In the late 1960s and throughout the 1970s, a primary concern was a lack of ships. The key question was whether the types and numbers of ships needed for augmentation of military sealift in an emergency would be available. In the 1980s, following the introduction of container ships (figure 12-10), barge carriers, and other highly specialized U.S. ships into the maritime inventory, the key question concerns the ships' suitability for military operations. Fast, large specialized ships are likely to be available in an emergency (figure 12-11). Current challenges involve learning how to use the ships and how to maintain their availability without entering into direct competition with the U.S. merchant marine.

A number of programs provide sealift augmentation resources. Others are being implemented or are in the planning stages. All are designed to contribute to sealift readiness, and thus, to the mobility of U.S. military forces. Among the sources MSC can tap to augment the capability of its controlled fleet in an emergency are:

1. Charter of additional privately owned ships and increased reliance on shipping services provided by scheduled liners and private contractors.

2. The Ready Reserve Force and National Defense Reserve Fleet.

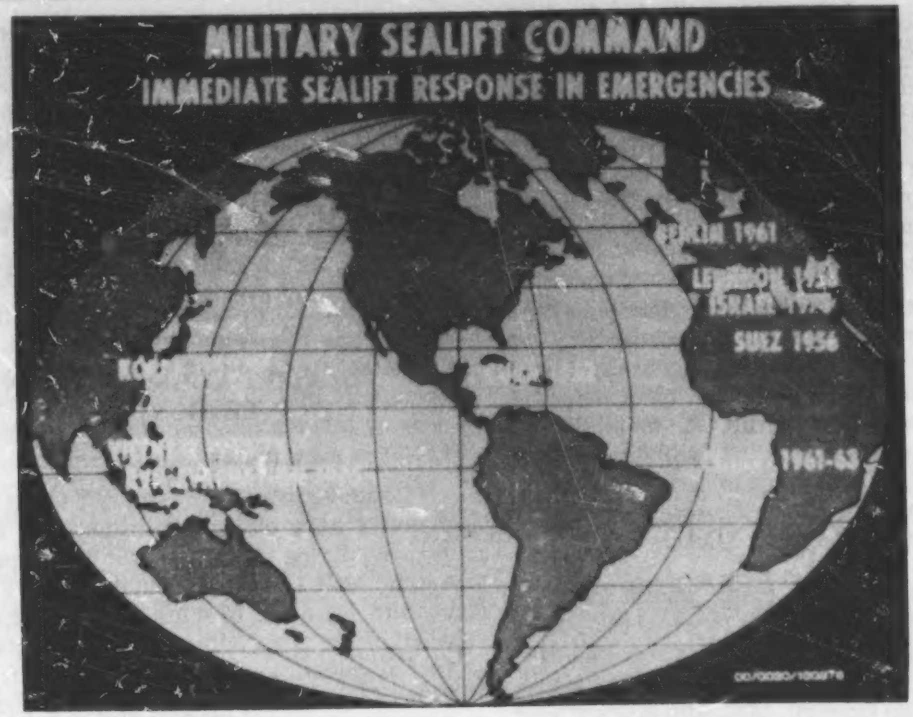

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Figure 12-10.—Containerization added to readiness and fast movement of supplies and equipment.

3. The Sealift Readiness Program Agreement.
4. The Voluntary Tanker Agreement.
5. Requisitioning of private shipping, including U.S.-owned ships registered under foreign flags.
6. Reliance on shipping made available through collective security agreements; for example, by the North Atlantic Treaty Organization, plus other shipping available in the world market.

The sealift resource immediately available to MSC in an emergency is its controlled fleet. It includes a few specialized Government-owned dry cargo ships. Approximately 25 privately owned, bareboat, or time-chartered tankers also are part of the fleet. All operate under MSC control and are available for support of any emergency. Their responsiveness is limited only by their location and the cargo they may be carrying at a particular time. Also immediately available to the command are shipping services provided by common carriers that transport military cargo on world routes under rates published by MSC in its biannual shipping and container agreements. Other sources of lift capability are MSC contractors who provide dedicated service in certain areas or on specific routes. These may be tug and barge operators or private businesses providing complete delivery systems through MSC contracts.

One of MSC's missions is to function as a transportation operating agency (DOD Instruction 5160.10), which authorizes the command to enter into agreements with private carriers to provide ships or shipping services. In an emergency, MSC would immediately solicit industry to charter ships or to expand its use of commercial shipping services. MSC efforts to procure additional capability would be limited only by the scope of the requirements and guidelines set forth in the Department of Defense Acquisition Regulation, the basic DOD procurement directive.

When industry cannot or will not provide additional capability, MSC will first turn to the

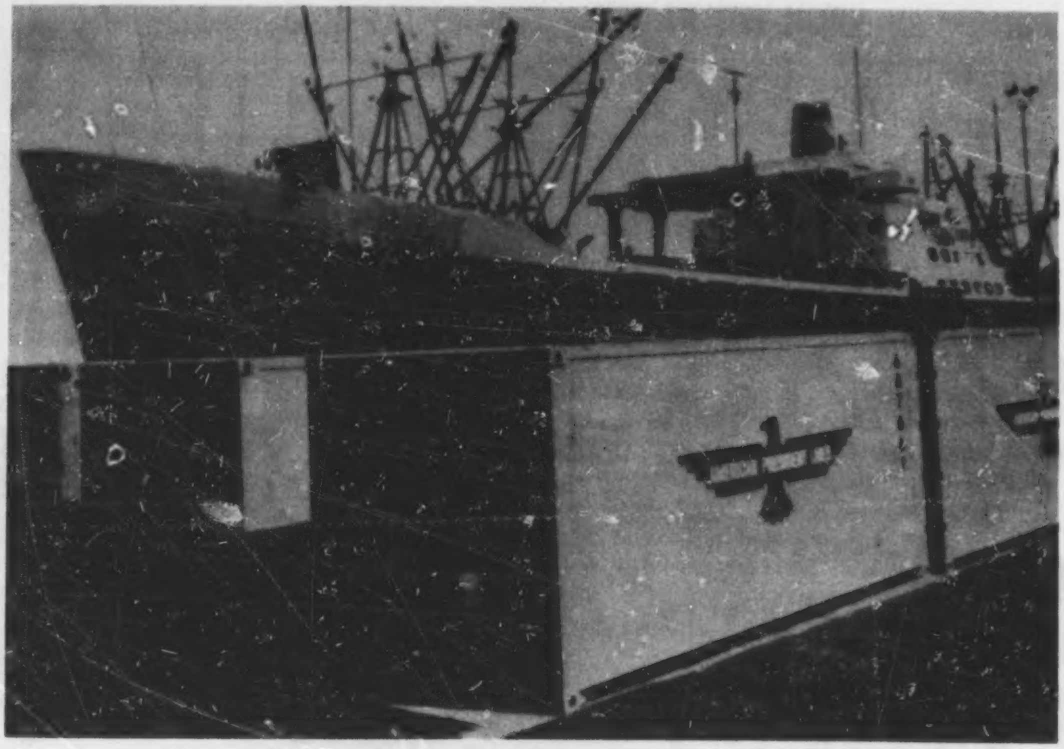

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Figure 12-11.—MSC immediate sealift response in emergencies.

Ready Reserve Force (RRF) (figure 12-12). In actuality, the RRF is a component of the National Defense Reserve Fleet (NDRF). The NDRF was established by the Merchant Ship Sales Act of 1946. The RRF was established in 1976 by a Memorandum of Agreement between the Department of the Navy and the Department of Commerce. By that agreement, Navy funds are provided for the maintenance of a number of NDRF ships so that they can be made available for emergency use within 5 to 10 days after notification. These ships make up the RRF. All are maintained by the Department of Transportation's Maritime Administration.

Ships in the RRF are selected by the Navy and the Maritime Administration. They may be ships traded in by a private carrier for a credit toward new construction, or ships already in the NDRF. When put into the RRF, the ships must meet all regulatory requirements for service. They are maintained under dehumidification with cathodic protection for the hulls—running of a low level current through the hull to prevent growth of barnacles and minimize rusting. Ship machinery and equipment are maintained in working condition, and the ships are withdrawn from the RRF to take part in no-notice exercises to assure their reliability.

Numbers of both RRF ships and the overall NDRF fluctuate as ships are laid up by private carriers or as the Maritime Administration disposes of those that have little potential for future use. For sealift purposes, only ships earmarked for such use are counted, although the actual NDRF is larger. It contains ships earmarked for scrapping, fleet auxiliary ships that would be activated by the Navy in an emergency, and other types that could be made available to private carriers if needs warrant.

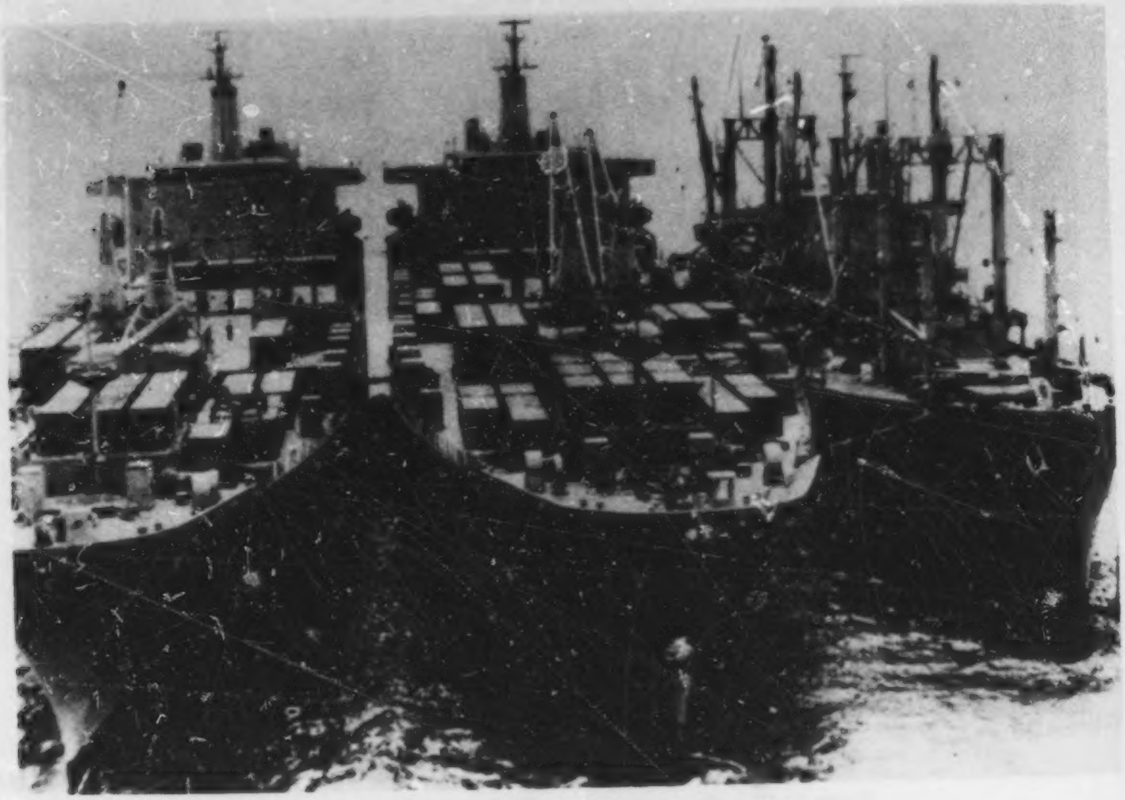

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Figure 12-12.—Ready Reserve Force.

In the early 1980s, the RRF consisted of slightly more than 25 ships with approximately 160 more in the NDRF (figure 12-13). Only one of the ships in the RRF was a World War II type of *Victory* hull, although more than 130 such ships were in the NDRF. The RRF was composed primarily of C-3 and C-4 types of hulls along with a few *Seatrain* class ships, essentially heavy-lift, dry-cargo ships. Another 30 ships of the same types were in the NDRF.

The primary difference in RRF and NDRF ships is that the former can be available for operation in 5 to 10 days. If the non-RRF ships in the NDRF are needed, they will be towed to yards already designated to be put into operating condition. Current planning indicates that most NDRF ships can be made available within 90-180 days. That, however, is admittedly a rosy estimate since yards would have other work that might delay NDRF ship activation. It also is reasonable to anticipate delays caused by a lack of immediately available parts for what is essentially a World War II vintage reserve fleet.

In the early 1980s, the numbers and tonnage of RRF ships are expected to expand as more modern ships are made available by industry. The RRF eventually may have as many as 45 or 50 ships. Ships also can be expected to be added to the NDRF. Both will become more modern and, therefore, more reliable. However, the total RRF and NDRF is not expected to expand beyond 200 to 225 ships since new additions will be balanced by Maritime Administration disposal of older ships—those with little potential for future military use.

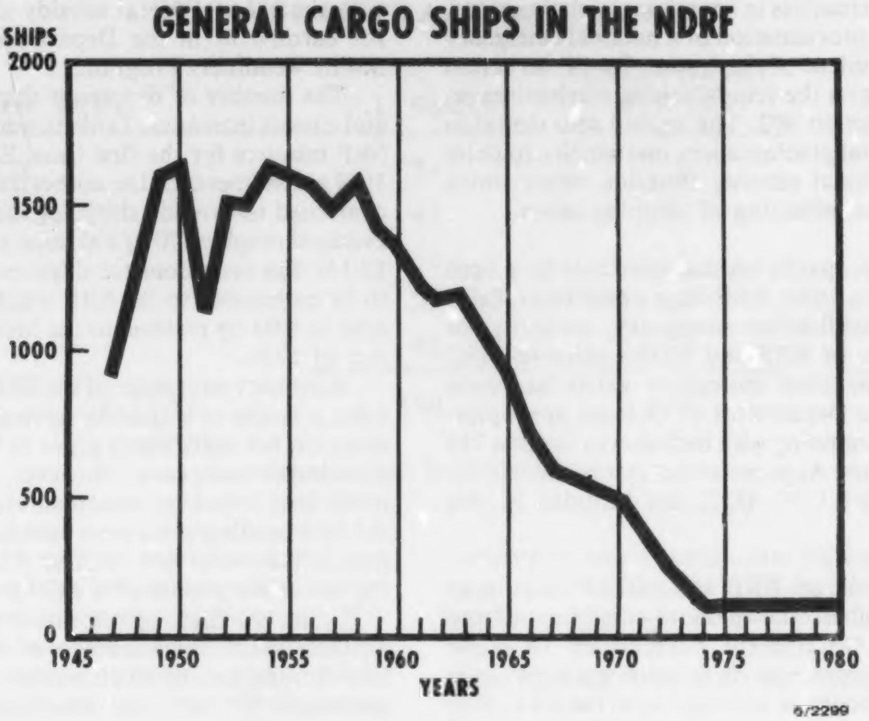

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Figure 12-13.—General cargo ships in the National Defense Reserve Fleet (NDRF).

ACTIVATION OF SEALIFT RESOURCES

While MSC expansion by increased charter of commercial ships and by greater reliance on shipping services provided by the industry would be coordinated with the CNO, the Assistant Secretary for Shipbuilding and Logistics, and the Deputy Assistant Secretary for Sealift and Maritime Affairs, no other approval would be needed. These offices provide guidance to MSC on procurement and contractual matters. However, major expansion obviously would require coordination with Department of Defense and with the Maritime Administration, which represents the commercial industry.

RRF AND NDRF SHIPS

To activate RRF or NDRF ships, MSC submits a recommendation to the CNO, who exercises operational control over MSC as a Navy fleet. CNO would forward an approved recommendation to the Secretary of the Navy for approval and funding. The recommendation would then be forwarded to JCS and the Maritime Administration. That agency would make ships available to MSC. While MSC could operate RRF or NDRF ships with civil service mariners or arrange for their operation by contractors, it is likely they would be operated under general agency agreements (GAAs). These are awards made by the Maritime Administration to private carriers who provide the crews and operate the ships under MSC control. GAAs were widely used during the war in Southeast Asia, although not during the Korean conflict.

The Merchant Ships Sales Act of 1946, which established the NDRF, stipulated that ships could be withdrawn for military use only when authority to requisition ships exists as provided in Section 902 of the Merchant Marine Act of 1936. There are two alternatives in complying with these acts. First is the proclamation of a national emergency by the President of the United States, an action which triggers the requisitioning mechanism set forth in Section 902. The second also demands a presidential proclamation, one which stipulates that a national security situation exists which requires requisitioning of shipping assets.

However, partly because questions have been raised as to whether RRF ships would be available in a non-mobilization emergency, authority for the transfer of RRF and NDRF ships to MSC when no national emergency exists has been written into Department of Defense appropriations acts beginning with inclusion of Section 719 in the Defense Appropriations Act of 1979 (P.L. 96-154). (See USC 4832, not included in this text.)

Activation of RRF and NDRF ships may appear cumbersome to those suspicious of the ability of Government bureaucracy to move swiftly. However, once a decision has been made that ships should be activated from the RRF, they can be on berth in a few days. NDRF ships would take longer because they first would need to be put in reliable material condition.

SEALIFT READINESS PROGRAM

It is the potential for delay in acquiring NDRF ships that led to development of the Department of Defense Sealift Readiness Program. The SRP was initiated in 1969 by the Department of Defense and the maritime industry. Initially known as RESPOND, it was retitled Sealift Readiness Program in 1971.

Private carriers who offered to lift military cargo in peacetime were required to commit a percentage of their ships for call-up by MSC in emergencies short of mobilization. The SRP was a contractual agreement between the carriers and MSC, with the carriers agreeing to provide emergency sealift augmentation as a prerequisite to carriage of peacetime military cargo. In fiscal year 1979, amendments to the Maritime Administration Appropriations Authorization Act required that U.S. flag ships built with or operated with the aid of Federal subsidy also be offered for enrollment in the Department of Defense Sealift Readiness Program.

The number of dry cargo ships, containers, and chassis increased. Tankers were added to the SRP resource for the first time. Each year since 1979 amendments to the authorization acts have continued to provide ships for the SRP—which averaged roughly 170 to 200 ships annually (figure 12-14). The provisions for ships receiving subsidy to be committed to the SRP were made permanent in 1981 by revision to the Merchant Marine Act of 1936.

A primary advantage of the SRP is that it provides a means of acquiring services of ships in a situation not sufficiently grave to be proclaimed a national emergency. However, the SRP has never been tested by implementation. That may not be a problem since mere existence of the SRP may influence carriers to offer ships to preclude the unknown impact of a call-up.

Under readiness agreements in effect in 1981, MSC could call up percentages of ships in specific time frames; i.e., up to 20 percent in 10 days, 30 percent in 30 days, the remainder in 60 days. However, MSC has proposed that this procedure be changed and that certain types and numbers of ships be predesignated for call-up in stages. Stages I and II would consist of 25 and 50 percent, respectively, of ships enrolled in the SRP. Stage III would cover 100 percent of ships enrolled in the program.

Implementation of the SRP presently begins with a recommendation from MSC. That recommendation must certify that numbers and types of ships needed to meet military requirements are not available by charter from the industry, that they are not immediately available from the RRF or NDRF, and that available ships or services are insufficient to fulfill military requirements. The MSC recommendation would be approved by the CNO, by the Assistant Secretary of Navy for Shipbuilding and Logistics, by the Secretary of the Navy, and by the Secretary of Defense. In addition, recognizing that the Maritime Administration is responsible for promotion of the well-being of the maritime industry, that agency has been granted authority by the Navy to review any recommendation for SRP implementation to make certain that no unjustified demands are made on private industry.

DRY CARGO SHIPS AS OF 27 MAR 1981

SHIP TYPE	P.L. 96-459	ADDITIONAL RFP 1500	TOTAL
BREAKBULK	74	0	74
CONTAINERSHIP	41	26	67
RO/RO	2	1	3
BARGE/SHIP	21	0	21
TANKER	42	0	42
TOTAL	180	27	207

Figure 12-14.—Sealift Readiness Program.

Coordination required and the absence of established procedures for implementation of SRP have raised questions as to whether or not SRP ships can be acquired as quickly as they can be requisitioned. Several command post exercises have given credibility to those who question whether the SRP can be relied on. As a result, MSC forwarded a proposed SRP manual to Navy and Defense in mid-1981 to establish procedures for its implementation, and to identify the responsibilities levied on those participating in or benefiting from the program.

The RRF, NDRF, and SRP are primarily oriented toward providing dry cargo ships. Ship numbers change from year to year, but review of the program since public law first required offering of federally subsidized ships for SRP enrollment indicates that in a given year about three-fourths of all industry's breakbulk ships have been committed to the SRP. SRP rolls also included about half of U.S. flag container ships and nearly all of the self-sustaining container ships. Roll-on/roll-off ships, ideal for contingency operations, were less plentiful with only about one-sixth of those sailing under the U.S. flag being SRP committed.

Barge carriers, *LASH* and *Seabee*, were another matter. Nearly all were enrolled in the SRP. The total dry cargo ships in the SRP generally has been about the 200 mark—approximately 80 percent of those active in the U.S. oceangoing fleet in FY 1981, a ratio that probably will continue as long as public law requires offering of subsidized ships for SRP enrollment. That legislation was made permanent in 1981.

VOLUNTARY TANKER AGREEMENT

The tanker picture is quite different. In FY 1981 only about 30 tankers were committed to the SRP—approximately 11 percent of those in the active U.S. flag fleet. All 30 were federally subsidized. Problems that might be anticipated in expansion of MSC tanker capability were effectively illustrated in FY 1980 when the command was forced to charter foreign flag tankers to meet peacetime requirements for delivery of military petroleum products. Approximately 55 percent of the MSC spot tanker charters in 1980 were foreign flag.

That emphasizes the importance of the Voluntary Tanker Agreement (figure 12-15). That is the short title for a program known officially as the Standby Voluntary Plan for Contribution of Tanker Capacity for National Defense Requirements. It is an agreement between the Maritime Administration and private tanker operators who participate voluntarily. Authority for the program is Section 708 of the Defense Production Act of 1950, as subsequently amended. Under authority of that act, participating carriers are given immunity from any charge of antitrust acts by the Attorney General of the United States for actions under the Agreement.

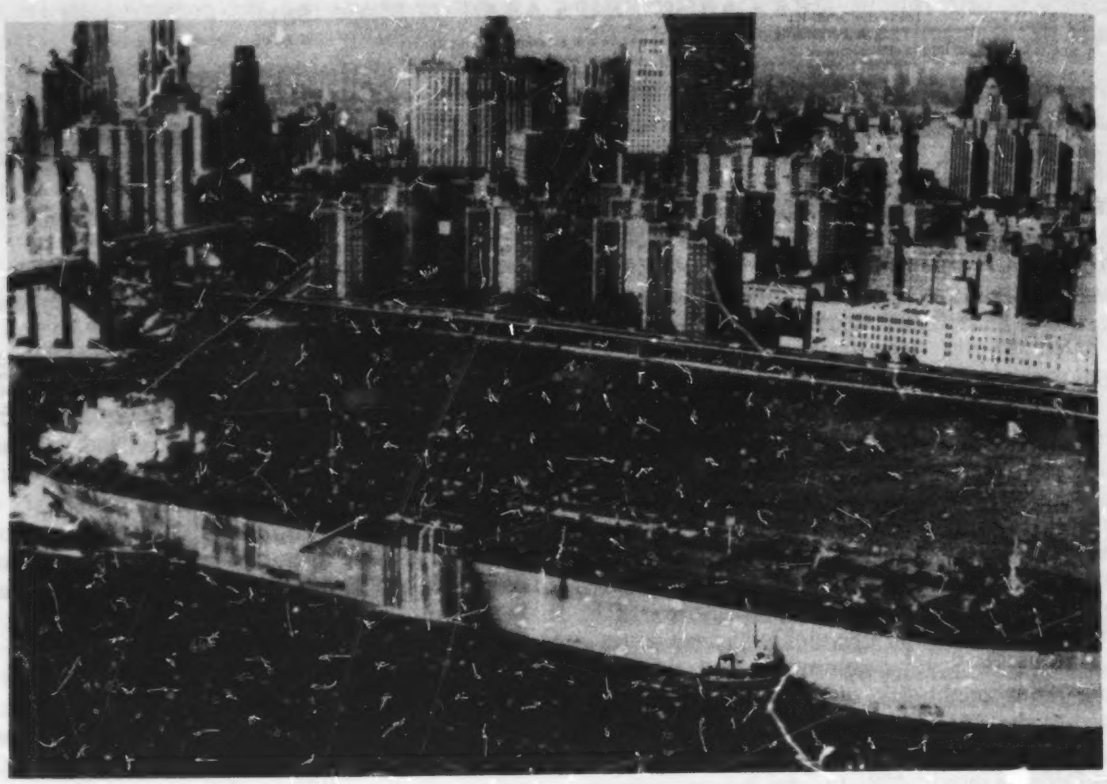

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Figure 12-15.—A tanker that may be chartered as part of the Voluntary Tanker Agreement.

In an emergency, representatives of participating carriers would meet at the call of the Maritime Administration. They would receive requirements from the Department of Defense and voluntarily allocate their own tankers to fulfill requirements if such action were considered warranted. Since the program is voluntary, with Department of Defense having no control over its implementation, it cannot be considered a military readiness program. However, it provides a structured means of requesting industry support in an emergency requiring fast response, but not sufficiently grave or of a duration long enough to justify ship requisitioning.

SHIP REQUISITIONING

Requisitioning ships for support of military operations differs from other augmentation programs in that it is involuntary. It is not an automatically available option. Requisitioning can be effected only when a state of national emergency exists or when the President has proclaimed that national security interests require requisitioning of merchant shipping. The authority to be exercised under provisions of the National Emergencies Act of 1978 must be specifically spelled out in a Presidential Proclamation of National Emergency, or in an executive order issued subsequent to the issuance of such a proclamation.

When a national emergency exists, or when the President has asserted that requisitioning of merchant ships is essential to national security, Section 902 of the Merchant Marine Act of 1936 provides requisitioning authority. Foreign flag ships lying idle in U.S. waters may be requisitioned under authority contained in the

Emergency Foreign Vessels Acquisition Act of 1954 (P.L. 83-36) (figure 12-16).

Ships covered by these acts consist of U.S. flag ships and ships owned by U.S. interests, but registered under foreign flags. The latter formerly were known as the Effective U.S. Control Fleet, since Federal guarantees of war-risk insurance, or agreements made prior to foreign registration, allowed their recall in an emergency. Some ships still are subject to recall by the Government. Since most ships are not, however, there is a reluctance of many persons to use the former description. Owners of Effective U.S. Control Fleet ships have asserted that the ships will be made available voluntarily, but their manning by foreign crews and service on foreign trade routes causes some doubts. A real limitation of these ships is that most are crude carriers, large tankers, and bulk ships with limited potential to meet contingency sealift requirements.

The Joint Chiefs of Staff would inform the Maritime Administration whenever a military situation requires requisitioning of merchant ships, as JCS would when activation of the NDRF is necessary. In coordination with JCS, that agency will arrange for the inclusion of Section 902 of the Merchant Marine Act of 1936 among the authorities to be exercised under a proclamation of national emergency, or will transmit to the President a request for a concurrent executive order invoking the authority of Section 902. Much the same procedure is followed when no state of national emergency is to be declared, but when there is an emergency that warrants the mobilization of U.S. flag shipping.

Privately owned ships may be requisitioned for Government service, or for the title of the Government. The latter would generally be the case if

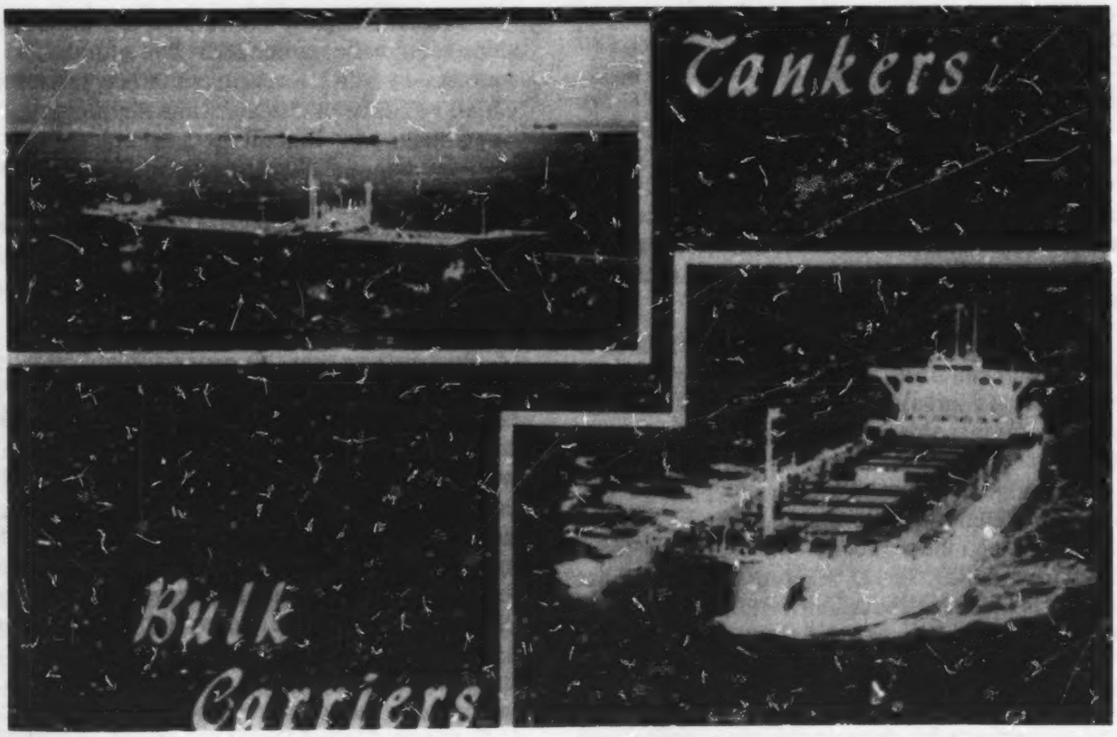

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Figure 12-16.—Foreign flag ships that may be requisitioned if an emergency should occur.

the ships are to be substantially modified or reconfigured. Ships also can be taken from the NDRF whenever a national emergency exists. These would be assigned to MSC or operated under GAA. Requisitioned ships would be bareboat or time-chartered by the Government. Those used for transportation also would be operated for the Government by general agents—probably the carriers who own and operate them normally. Requisitioned ships may operate under MSC control if needed for military support purposes, or may be controlled by the Maritime Administration and be used for essential domestic service or in foreign trade. An important consideration in any decision to implement requisitioning authority is that it may be selective; that is, only the number and types of ships needed may be requisitioned by the Government.

NATO SEALIFT ASSETS

A final sealift readiness resource, one available by agreements between the United States and other NATO nations, consists of privately and Government-owned foreign-flag merchant ships. A substantial number, from 400 to 600, are committed for use in support of a NATO contingency. Shipping is the only asset that NATO member nations (figure 12-17) are committed to pool in an emergency or contingency situation, an effective illustration of the importance of sealift to mobility and sustainability of deployed military forces.

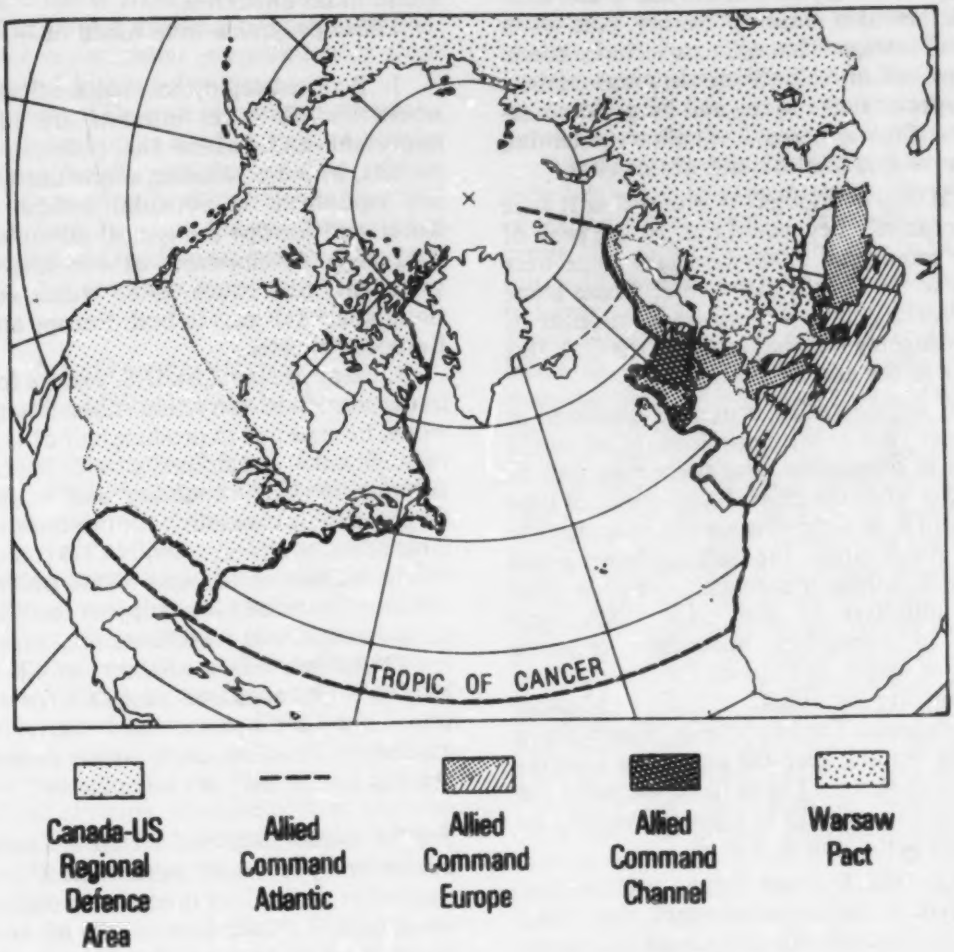
Included among the several hundred NATO vessels that can be allocated for military support purposes are breakbulk ships, roll-on/roll-off ships, container ships, bulk carriers, and tankers. To assess military support requirements and to make ship allocation determinations, NATO has set up a Defense Shipping Authority (DSA). Subordinate to the authority is the NATO Defense Shipping Council. The U.S. representative on that council is the Maritime Administration (MARAD) administrator or a designated representative.

A council staff made up of members of various NATO nations is the working body that reviews requests for ships or shipping services and allocates assets to NATO member countries. U.S. coordination with the Defense Shipping Council is handled by the National Shipping Authority (NSA), a body activated by the Maritime Administration in an emergency situation. That authority provides input to the staff of the Defense Shipping Council. The NSA also reallocates NATO merchant ships made available to the United States. Such ships can be assigned to MSC for military support use, or operated by NSA in support of domestic or foreign trade objectives.

In a major contingency or general war, NSA could operate NATO or requisitioned ships as tramps or use them in scheduled liner service. It also could designate NATO ships or requisitioned ships to provide scheduled or liner service for military support purposes; i.e., the delivery of ammunition to overseas areas. In a wartime situation, some types of ships, for example, container ships or barge carriers, could be managed as fleets rather than individually. The purpose, of course, would be to take full advantage of their overall productivity.

A recommendation to seek NATO committed ships could be originated by a number of sources—by MSC, Department of Navy, the Joint Chiefs of Staff, or the Maritime Administration. The likelihood is that all these agencies would be involved as would the Federal Emergency Management Agency. The ultimate recommendation would go to the President from the Secretary of Defense. The President would coordinate any United States request with both NATO and NATO member nations.

Recognizing that this process might take time when delay would be critical to success of a particular operation, a group has been created which could speed up augmentation of U.S. sealift capability—the Civil Sealift Group. The Civil Sealift Group, composed of representatives of European nations who may or may not be NATO members, would meet in the critical period before the declaration of a national emergency. Members of the Civil Sealift Group would be empowered by the nations they represent to allocate ships of their own countries to the United States for use in reinforcement of European or European-based U.S. forces. United States coordination with this body also is handled by the Maritime Administration.


TROPIC OF CANCER
Canada-US Regional Defence Area
Allied Command Atlantic
Allied Command Europe
Allied Command Channel
Warsaw Pact

30.230.1

Figure 12-17.—NATO areas of responsibility.

SEALIFT CAPABILITY IN AN EMERGENCY

Would resources available through implementation of these readiness programs provide the types and numbers of merchant ships necessary to support deployed forces in any major action? That question can be answered only if answers are available as to the number of troops committed, the area to which they are deployed, likely length of the war, availability of fuel, length of supply lines, extent of the support provided by Allies, whether hostilities will be limited to the use of conventional weapons, and a long list of related questions.

The number of ships that might be available is never certain. Totaling assets of the U.S. flag maritime industry, the RRF, the NDRF, the SRP, the Voluntary Tanker Agreement, and requisitioning and NATO committed assets is misleading since some of the resources are duplicated. For example, the SRP, Voluntary Tanker Agreement, and requisitioning all draw ships from the active U.S. merchant fleet. At best, the United States could count on no more than 1,200 to 1,300 ships if it controlled every ship in the active and inactive U.S. merchant marine inventory, plus 400 or more NATO ships. That estimate includes breakbulk ships, roll-on/roll-off vessels, barge carriers, varied types of tankers, tug and barge combinations, and ships with even less military potential, for example liquefied natural gas carriers.

Would they be enough? If World War II were being reenacted, they would not. At the peak of that war more than 5,000 merchant ships were available to the United States. Ship losses alone during World War II were twice the number of active oceangoing merchant ships in the U.S. flag inventory at the end of 1981.

Sealift augmentation programs discussed in this chapter have other limitations. Most would take time to implement, and there may well be emergencies when the chief characteristic of time is the lack of it. In defending against an immediate threat or quick strike, the only readiness assets of value will be those immediately available. That is why initiatives in the early 1980s were designed to strengthen immediate response capability of sealift, to augment the force deployment capability of airlift, and thus to assure military readiness. The importance of mobility as a means of helping keep the peace and assuring United States security began to be recognized in the early 1980s, probably to a greater degree than at any time since World War II.

The FY 1982 Defense Department posture statement to Congress emphasized that force mobility was "second only to the capability of our forward-deployed forces [and is] often the key to deterrence or successful forward defense." Citing the endless variety of circumstances under which U.S. military forces conceivably could be deployed, the Department of Defense report concluded that the size and structure of mobility forces are based on the two "most severe tests for conventional forces—concurrent Soviet threats to the Persian Gulf region and NATO."

Assuming that Warsaw Pact forces can be deployed fully within a 2-week period, Department of Defense established objectives are to be able to deploy "most U.S. Air Forces and a minimum of six reinforcing divisions within 10 days of a NATO decision to mobilize," and to deploy a reserve corps within the next few days. Fiscal year 1982-1986 programs were designed to attain those objectives.

Those programs were based on—

1. Reduced deployment requirements in areas where United States interests are sufficiently important and, where the political situation permits, by pre-positioning ammunition, supplies, and equipment in potential combat theaters. Korea and Europe are typical examples.
2. The development of mobility capacity sufficient to reduce U.S. vulnerability to simultaneous threats in both Europe and a non-European theater.
3. Heavy reliance on U.S. reserve forces, the transportation industry, and Allies. Reserve forces would be expected to produce half of U.S. airlift capability; the civil airlines, all with Defense troop carrying/ferrying capability and a third with cargo-carrying capability; the maritime industry, most of the sealift capacity. NATO contributions would include sealift and airlift (military and civilian), bases, and base support facilities. Congress was told tnat force sustaining capability in the 1980s, assuming availability of 400 or more NATO ships, appeared adequate for a NATO war. But deployment and early support capability—mobility assets—were deemed to be too austere for military complacency.

The Department of Defense has established a number of readiness enhancement programs, planned or initiated, to strengthen mobility forces.

Emphasis remains on a mix of forces and assets in terms of capability, cost, and closure time. Since increased airlift capacity is extremely costly and since sealift can meet long-term but not first-phase deployment requirements, pre-positioning presents an attractive option for support of a NATO contingency.

Maintenance of a Rapid Deployment Force (RDF) creates mobility problems. Airlift must be capable of lifting troops to combat areas and resupplying those troops in the initial phases of a contingency since land-based pre-positioning of equipment and supplies in areas where RDF forces might be deployed is not always possible—because of political realities. Sea-based pre-positioning can assure both security and mobility for prepositioned supplies and equipment. It is also cost effective. Fast response sealift can deliver a significant volume of equipment and supplies for division-size forces from the continental United States in 2 to 4 weeks following a deployment decision. However, maritime pre-positioning ships could respond within a few days.

Department of Defense conclusions, therefore, have been to beef up its airlift muscle, to acquire fast-response sealift capability, and to rely on maritime pre-positioning ships to a greater extent than ever before. In effect, the mobility triad has been expanded and made more flexible. But it still is the basis for readiness planning.

ENHANCEMENT OF SEALIFT CAPABILITY

Measures programmed by Defense for the fiscal year 1982-86 period to upgrade airlift capability include modifying C-5 Galaxy aircraft to increase their ability to transport tanks and other outsize Army equipment, modifying and adding aerial refueling capability for C-141 Starlifter cargo aircraft, increasing cargo aircraft utilization to meet wartime goals, encouraging industry to modernize and strengthen its own air cargo fleet, and developing a new giant cargo aircraft capable of handling heavy equipment and landing on relatively undeveloped airstrips. Considerable money was sought by Defense for modernizing the Army's fleet of CH-47 helicopters and Marine Corps CH-53E helos.

A primary objective of sealift enhancement actions in the 1980s is the development of the capability to sealift at least one mechanized division to the Persian Gulf without having to rely on assets provided by the private sector. Defense thus took steps to acquire up to eight SL-7 container ships—vessels capable of sustaining 33-knot speeds. Relatively new and owned by private carriers, the SL-7s were available because of their high fuel consumption. Their appetite made them noncompetitive in the world trade arena.

Reconfigured into a roll-on/roll-off mode with some capability to carry containers, the SL-7s are deemed capable of lifting a mechanized division plus some support equipment to the Persian Gulf in 20 to 26 days, or to the front line in Europe in less than 15 days. Funding for acquisition and reconfiguration of these ships for FY 1981 was $285 million. Proposed funding in each of the next fiscal years was set at $216.4 million and $232.8 million. However, budget constraints caused some stretchout of the acquisition of the SL-7s. Six were procured in FY 1982 and two others were to be purchased in the following fiscal year.

When reconfigured, the fast-response ships are to be berthed in areas near troop units they might be expected to support. Manned by skeleton crews, they are expected to be able to be put into operation within 5 days. That, however, depends to a great extent on availability of crew members. Plans in late 1981 called for MSC to award contracts to private carriers for maintaining and manning the ships while in a reserve status. If the plans are put into operation, contractors will continue to man the ships with civilian crews.

An important element in development of a fast-response sealift force is an understanding between Defense and industry that the ships will not be operated by MSC in peacetime for carriage of military cargo, a practice that industry would oppose since it would sharply reduce availability of military cargo for industry's own ships.

Navy efforts, in cooperation with the Maritime Administration, to beef up both the RRF and NDRF were expected to continue in the FY 1982-1986 period. Eight million dollars was included in the 1980 budget for maintaining RRF ships in 5- to 10-day readiness. Another $35 million was to be invested in the RRF in fiscal years 1982 and 1983. The objective was a 43-ship RRF, including six tankers, by 1986. The tankers would be former MSC-controlled assets scheduled for layup. Navy also planned to increase responsiveness of the RRF by assuring that at least 10 ships in that force can be put on berth in 5 days or less.

While the numbers cited above are rounded and may change throughout the 1980s, they illustrate a point frequently reiterated in this chapter—that the importance of mobility for the U.S. Armed Forces has taken on a new dimension as a result of the changing world political situation. Tensions in the Middle East and throughout Southwest Asia, and those resulting from differences in ideological philosophy and commitments to world peace by the USSR and United States, have had a great influence on mobility planning.

Thus, the Department of Defense early in the 1980s sought funding for pre-positioning of petroleum products, ammunition, and equipment for a Marine Amphibious Brigade in Norway. The purpose was to provide the theater commander with a highly mobile, fast-reacting Marine Amphibious Brigade—a part of the RDF—tailored to meet any anticipated threat in that area. However, pre-positioning of equipment and supplies for an RDF (figure 12-18) or conventional forces requires acceptance and support of the host nation, conditions that cannot always be assured given the political realities of the 20th century world.

Those realities are a major reason for continuing development of programs to pre-position equipment and supplies at sea, in ships that can deliver the munitions, fuel, weapons systems, and support gear to troops deployed by air. Ships allow flexibility not attainable by land-based pre-positioning since material needed to support deployed troops can easily be moved from area to area to meet new threats.

A highlight of MSC efforts in 1980 was the establishment of a seven-ship NTPF deployed to the Indian Ocean (figure 12-19) in July. The force included three roll-on/roll-off ships, two chartered and one Government-owned *Maine* class vessels, and two MSC Controlled Fleet breakbulk ships. Two tankers, one loaded with fuel and the other with water, rounded out the force. Together the seven ships carried supplies and equipment to sustain initial operations by a 15,000-man Marine Corps task force that should be deployed by air. The ships also carried ammunition and support equipment for several

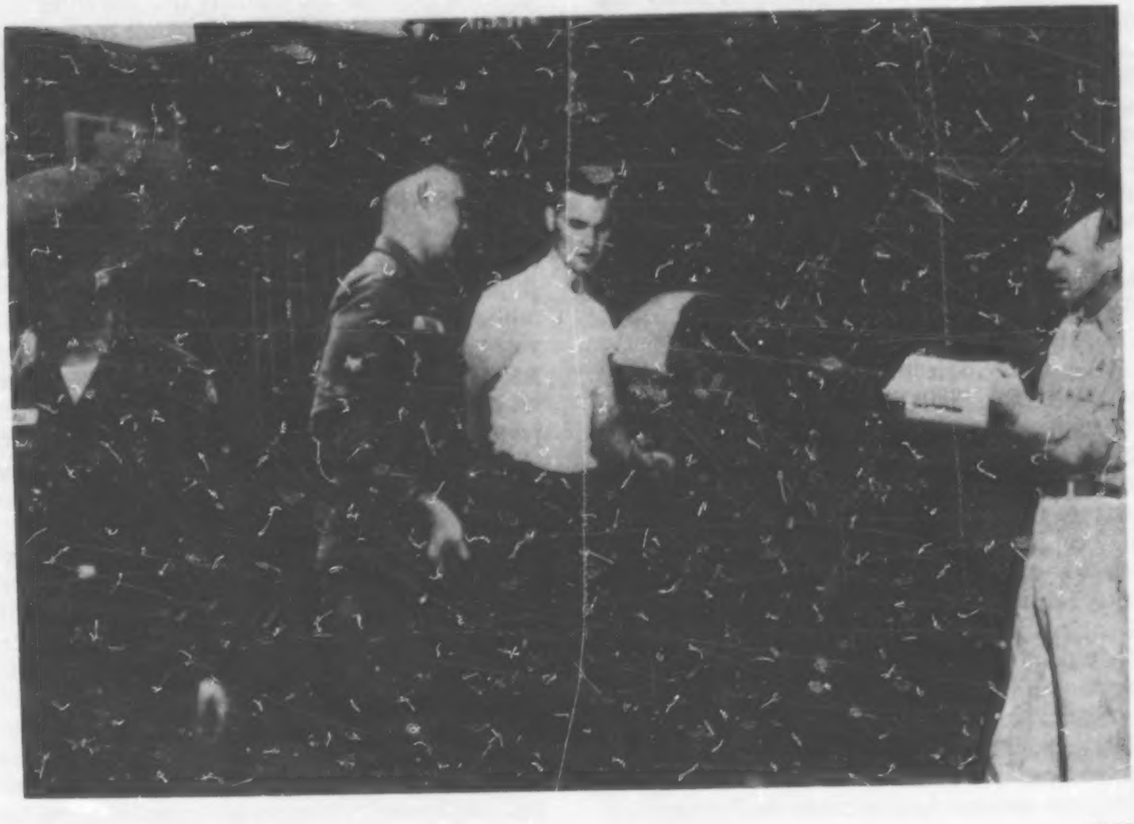


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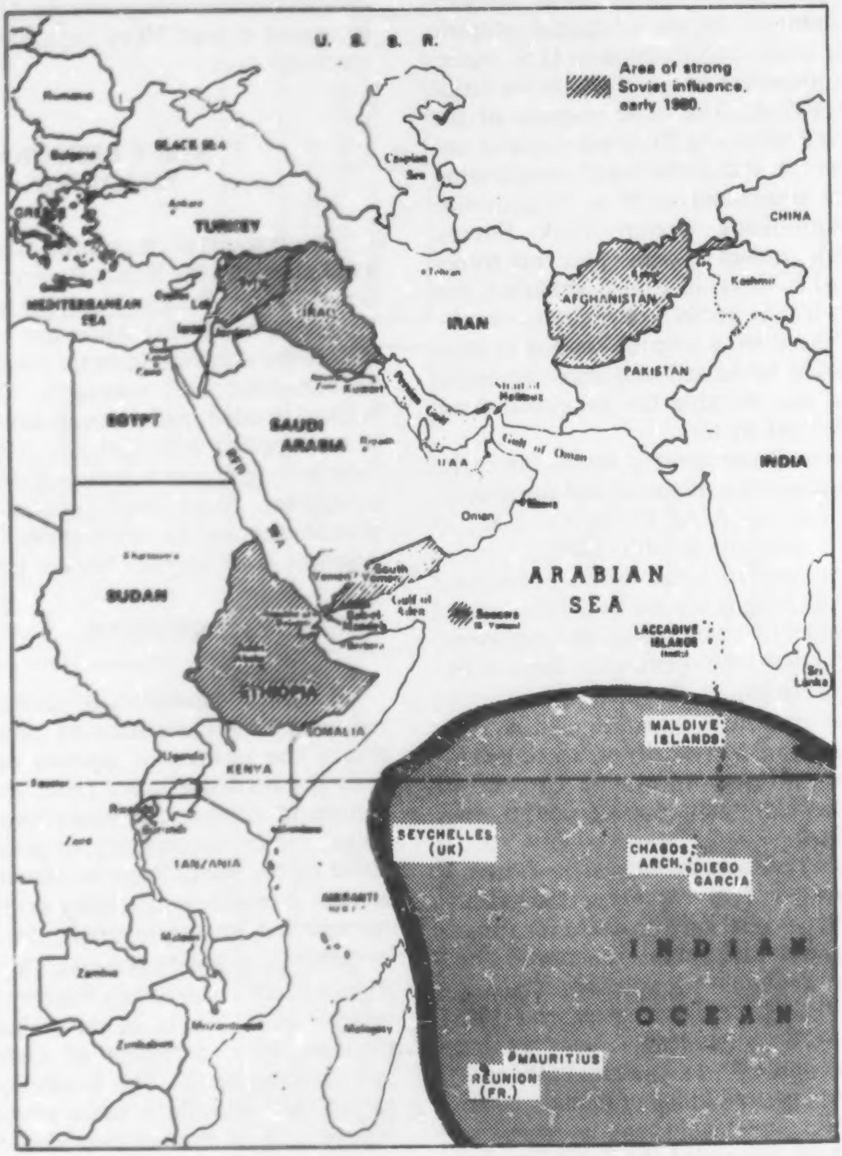
Figure 12-18.—Pre-positioning of equipment and supplies for the Rapid Deployment Force.

tactical Air Force wings. By late 1981, two barge carriers *(LASH)*, a breakbulk ship, and three more tankers had been added to the Near Term Pre-Positioning Force (NTPF).

In addition to helping establish a counter force to combat threats to world peace, the development, loading, and deployment of the NTPF provides a means of testing another DOD-JCS readiness program. Plans developed in the early 1980s included as many as 14 maritime pre-positioning ships. They initially were to be of a new design, an adaptation of a previous


U. S. S. R.
▨ Area of strong Soviet influence, early 1980.
BLACK SEA
Caspian Sea
GREECE
TURKEY
MEDITERRANEAN SEA
IRAQ
IRAN
AFGHANISTAN
CHINA
Kashmir
PAKISTAN
INDIA
Kuwait
Persian Gulf
Strait of Hormuz
Gulf of Oman
UAA
EGYPT
SAUDI ARABIA
RED SEA
Oman
SUDAN
South Yemen
Gulf of Aden
Socotra
ARABIAN SEA
LACCADIVE ISLANDS
Sri Lanka
ETHIOPIA
SOMALIA
KENYA
TANZANIA
Zambia
MALDIVE ISLANDS
SEYCHELLES (UK)
CHAGOS ARCH.
DIEGO GARCIA
INDIAN OCEAN
MAURITIUS
REUNION (FR.)

30.230

Figure 12-19.—Near Term Pre-Positioned Force (NTPF) Indian Ocean area.

ultipurpose ship design prepared by the aritime Administration.

However, in cooperation with the industry, and based on continuing analyses of military requirements and the type of ships that could best meet those requirements at the lowest cost, consideration was given to several mixes of new-design ships, roll-on/roll-off ships acquired from industry, acquisition of *LASH* barge carrying ships from industry, or use of special purpose ships already under construction in U.S. yards. Changing composition of the NTPF is the result of such alternatives. The basic purpose of the Maritime Pre-Positioning Program remains unchanged, however. It calls for the pre-positioning at sea of the equipment of three brigade-size Marine Amphibious Group Task Forces (MAGTF) with supplies to support the task forces for a period of 30 days. In a crisis situation, the Marine Corps troops would be airlifted to the objective area. Fixed wing aircraft needed to support them would be ferried and small amounts of equipment not suitable for pre-positioning would be delivered by air.

The Defense Department goals in the early 1980s were to position equipment and supplies in MPS vessels for one MAGTF in FY 1983, a second in 1985, and the third in 1987.

A key departure from past military practice, at-sea pre-positioning is unique in another way. Ships are manned by civilians, either employees of the ocean carriers who operate the ships or by MSC civil service mariners. As in normal industry practice, the ships remain on station while crew members are rotated individually at scheduled intervals. Results are lower operational cost and no drain on skilled Navy manpower needed to man combatant ships.

In its FY 1982 posture statement, the Defense Department proposed that more than $265 million be authorized to convert existing ships for use as maritime pre-positioning ships. Almost one-half billion dollars was sought for construction of 14 such ships in the period from fiscal year 1981 through 1983. While subsequent actions may have amended the program, it was apparent in the early 1980s that at-sea pre-positioning of military equipment was a concept that would continue to be supported. Readiness demanded the flexibility that at-sea pre-positioning of equipment and supplies can provide.

However, while ships can be acquired or built, loaded, manned and deployed, and while mobile combat forces can be earmarked and airlifted when and where necessary, considerably more must be done to assure sealift readiness. Recruiting and retention of civilian ship crews is but one example. If skilled manpower is not available, readiness does not exist. Tapping the civilian mariner manpower pool has significantly increased overall Navy capability in the sealift readiness area.

SEALIFT PERSONNEL READINESS

When sealift augmentation assets such as those available from the Ready Reserve Force, the National Defense Reserve Fleet, the Sealift Readiness Program, or NATO Allies are made available, manpower demands increase sharply. Ships must be scheduled and managed. Cargo must be booked, loaded, and properly stowed. Ships have to be supplied with fuel and propulsion plants must be kept in operating condition, as does ships' equipment. Ships need protection from such diverse threats as submarines, aircraft, and missiles—even Mother Nature herself.

MSC NAVAL RESERVE

In short, expansion of mobility capability requires the mobilization of people as well as ships. The primary manpower resource, other than the maritime labor pool, available to the command to expand its operations in support of an emergency, contingency, or general war is provided by the Naval Reserve. Naval reservists are as vital to readiness capability as military personnel and civilian employees of the command.

MSC is a Ready Reserve Project Manager (figure 12-20). The Ready Reserve is designed to provide additional units and trained individuals required by Department of Defense to meet mobilization needs. The Ready Reserve can be categorized into three main elements: selected reserve units, pretrained individual reservists, and a training pipeline. These are supplemented by the Standby Reserves and retired personnel who can be called up in a mobilization.

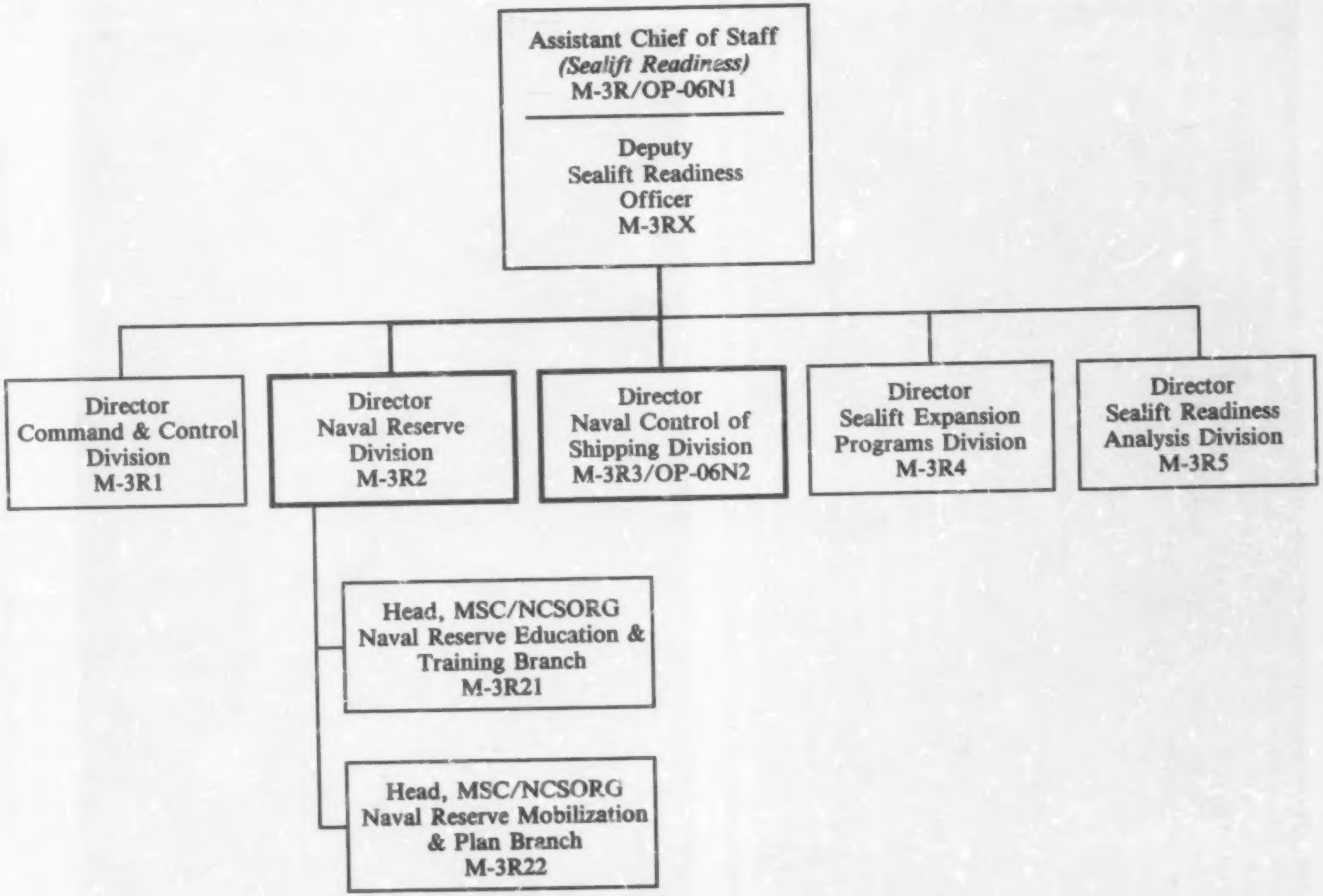

Assistant Chief of Staff
(Sealift Readiness)
M-3R/OP-06N1
Deputy
Sealift Readiness
Officer
M-3RX
Director
Command & Control
Division
M-3R1
Director
Naval Reserve
Division
M-3R2
Director
Naval Control of
Shipping Division
M-3R3/OP-06N2
Director
Sealift Expansion
Programs Division
M-3R4
Director
Sealift Readiness
Analysis Division
M-3R5
Head, MSC/NCSORG
Naval Reserve Education &
Training Branch
M-3R21
Head, MSC/NCSORG
Naval Reserve Mobilization
& Plan Branch
M-3R22

Figure 12-20.—MSC/NCSORG Naval Reserve organizational chart.

The Naval Reserve, one element of the overall Department of Defense reserve program, was established in 1938 by passage of the Naval Reserve Act. When the Military Sea Transportation Service (MSTS) was organized in 1949, reserve units managed by the Naval Sea Transportation Service were assigned to MSTS. When MSTS was renamed Military Sealift Command in 1970, reserve units sponsored by the command were still all-officer units (figure 12-21) intended to augment MSC capability in a major emergency.

A major change in the MSC reservist picture was initiated in 1974 when the command began recruiting enlisted reservists (figure 12-22). Enlisted skills are critical to the operation of MSC offices and smaller units. Their members need multiple skills since they often double in brass in such functions as traffic management, purchasing, administration, financial management, ship husbanding, and a variety of other areas related more to ocean transportation than to strictly military requirements. In short, readiness of MSC reservists demands unique skills and great individual abilities.

Likely trends in the 1980s that may have an impact on MSC reservists can be categorized under a single heading, "Readiness" (figure 12-23). Throughout Department of Defense and within MSC, great emphasis is placed on strengthening U.S. strategic sealift and, thus, increasing mobility of the Armed Forces. Pre-positioning of ships loaded with equipment and supplies for the RDF is one example. Assignment to MSC of fast-response ships such as the SL-7s acquired in 1981 along with roll-on-roll-off ships and barge carriers offer additional evidence.

In addition, MSC is being assigned more and more Navy fleet support ships—auxiliary vessels, manned by civil service mariners, which help increase overall Navy fleet capability.

A concomitant trend has increased MSC involvement in the JCS contingency planning process. As part of both long- and short-term planning reflected in a variety of contingency plans, greater attention is paid to mobilization

30.231

Figure 12-21.—Before 1974, the MSC Naval Reserve was an all-officer program.

30.232

Figure 12-22.—Enlisted personnel are a significant and integral part of the MSC Naval Reserve Program.

30.233

Figure 12-23.—MSC Naval Reserve Program is a major factor toward readiness.

assignments for reserve units that are in accord with planning scenarios. Missions and mobilization assignments for reserve organizations will continue to be governed by requirements and missions set forth in current plans for deployment and support of U.S. troops.

New types of ships, pre-positioned ships, fast-response assets, detailed contingency plans to cope with potential crises in Southwest Asia and the Middle East or elsewhere, all require that MSC reservists and the units they make up be immediately ready to swing into action when activated. For individual reservists, that obviously means expanded training so that they are familiar with changes taking place in the Military Establishment, as well as within the U.S. maritime industry. The words are not new, but their accuracy is greater than ever before, that MSC naval reservists are full-fledged members of the command's strategic mobility sealift team. They are the basic source of skilled manpower necessary to rapidly expand command capability in any emergency.

As the command entered the decade of the 1980s, MSC sponsored approximately 45 Selected Reserve organizations. All were designed to augment and increase command capability in an emergency or contingency situation. Included were two military transportation units, a special unit established to carry on planning liaison duties with the JCS-sponsored Joint Development Agency, 27 MSC office units, and 14 headquarters units. Two of the latter support MSC headquarters expansion with approximately 12 structured to augment MSC area command headquarters.

NAVAL CONTROL OF SHIPPING ORGANIZATION

As technical program manager for Ready Reserve units, MSC is responsible for the administration and training of individual reservists and the skilled teams they represent. MSC area and subarea commands also are directly involved in training MSC-sponsored reserve organizations (figure 12-24). In addition, the commander of MSC has for many years been responsible for administering the Naval Control of Shipping Organization (NCSORG). Manned almost solely by reservists in peacetime as they would be in an emergency, NCSORG units (figure 12-25) will control the movement of merchant shipping in a contingency or war.

The CNO is responsible for the NCSORG program with MSC acting as an administrative agency for the program in peacetime. Eighty-two NCSORG units were active in mid-1983.

Overall, activation of MSC-sponsored Ready Reserve units would allow MSC to double its peacetime size. MSC-sponsored reserve units would provide about 75 percent of all commands ashore strength if fully activated in an emergency. However, NCSORG (figure 12-26) units activated in an emergency would be directly controlled by the fleet commanders or CINC, not by MSC.

Although many think convoy operations (figure 12-27) originated in World War II, convoys were first used in World War I. However, little was done to allocate authority for convoy planning once that war was over. Just before World War II started, the President established a Strategic Shipping Board that ultimately was replaced by the War Shipping Administration (WSA). WSA allocated ships and the Navy controlled their routings.

Many ships with speeds in excess of 11 knots sailed alone during World War II, as did those unable to sustain 8-knot speeds. Routing to avoid enemy submarines and surface ships was of critical importance, and coordination among Navy, British, and civilian authorities was continuing and close.

Before United States entry into World War II, a system known as Merchant Ship Control (MERCO) had been adopted to keep authorities abreast of movements of both individual ships and convoys through their areas. Merchant ship radio traffic was handled by the Broadcast to Allied Merchant Ships (BAMS) system. It provided continuing information on specified channels with different authorities having responsibilities for varied zones and subdivisions of those zones.

During the period from December 1941 to VE day, more than 8,680 convoys sailed the Atlantic, averaging 11 ships per convoy (figure 12-28). There were 205 ships sunk even before convoys began operating in May 1942. Another 120 ships were sunk before July 1942. Convoy operations greatly reduced ship losses which never again reached significant levels.

Current merchant ships are much different from those in World War II. They are bigger, faster, and carry much more cargo. The potential dangers they would face have changed. Submarines and surface ships are equipped with missiles that can be fired miles away from targets. Convoy operations, therefore, will be much different in the future. Ships will be widely spaced and may carry missiles for self-protection. Their routing will be controlled by instantaneous satellite communications that will allow convoy commanders to take full advantage of data gained from a vast and varied array of warning systems.

Reservists assigned to an NCSORG unit must immediately be ready to perform NCS duties once the unit is mobilized. Since NCSORG is manned almost exclusively by reservists, its members have unique challenges. Their training and the readiness that results are critical. Their know-how must bridge the gap between the active Navy and civilian mariners on merchant ships. They must maintain a high degree of familiarity with world ports, port areas, and capabilities of the highly specialized ships that make up the bulk of the U.S. and NATO Flag Merchant Fleets. Control of merchant shipping in an emergency will be vitally important. It is the only major Navy responsibility that has been assigned solely to Naval Reserve organizations. Missions of MSC-sponsored Naval Reserve units (figure 12-29) are similarly important since they provide the only trained and ready source of manpower augmentation available to the command.

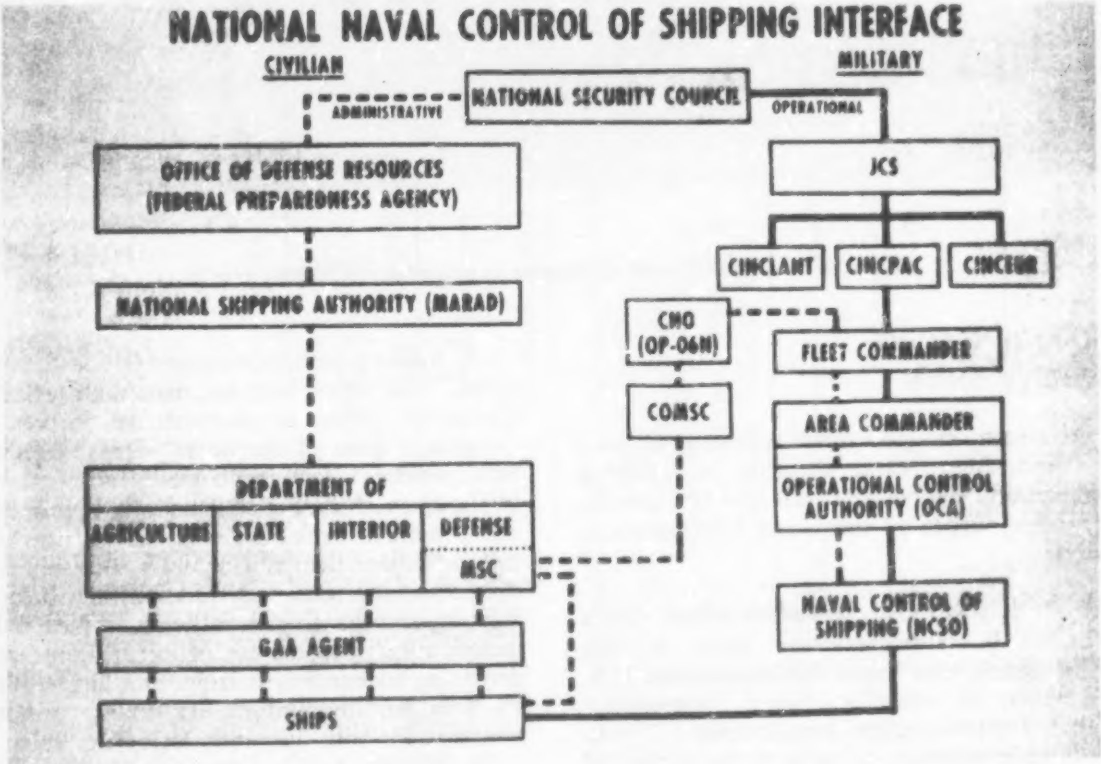

NATIONAL NAVAL CONTROL OF SHIPPING INTERFACE
CIVILIAN
MILITARY
NATIONAL SECURITY COUNCIL
ADMINISTRATIVE
OPERATIONAL
OFFICE OF DEFENSE RESOURCES (FEDERAL PREPAREDNESS AGENCY)
JCS
CINCLANT
CINCPAC
CINCEUR
NATIONAL SHIPPING AUTHORITY (MARAD)
CNO (OP-06N)
FLEET COMMANDER
COMSC
AREA COMMANDER
OPERATIONAL CONTROL AUTHORITY (OCA)
DEPARTMENT OF
AGRICULTURE
STATE
INTERIOR
DEFENSE
MSC
NAVAL CONTROL OF SHIPPING (NCSO)
GAA AGENT
SHIPS

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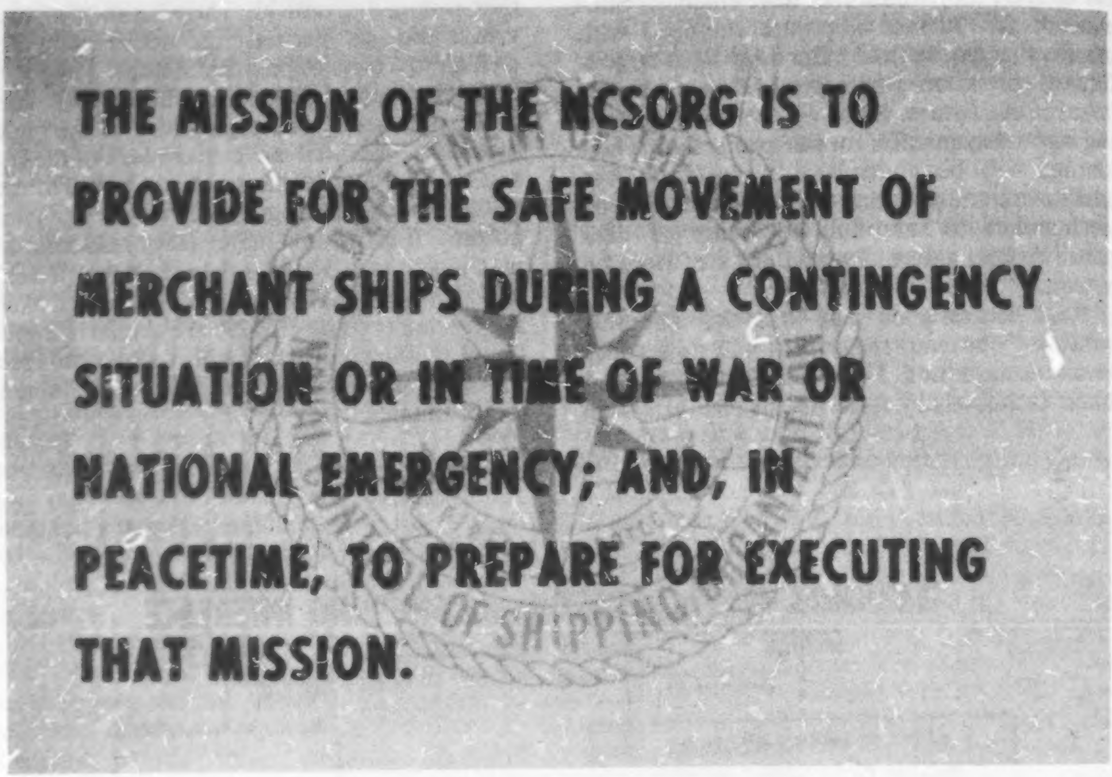
Figure 12-24.—Naval control of shipping interface.



THE MISSION OF THE NCSORG IS TO PROVIDE FOR THE SAFE MOVEMENT OF MERCHANT SHIPS DURING A CONTINGENCY SITUATION OR IN TIME OF WAR OR NATIONAL EMERGENCY; AND, IN PEACETIME, TO PREPARE FOR EXECUTING THAT MISSION.

30.235

Figure 12-25.—Naval Control of Shipping Organization (NCSORG) mission.

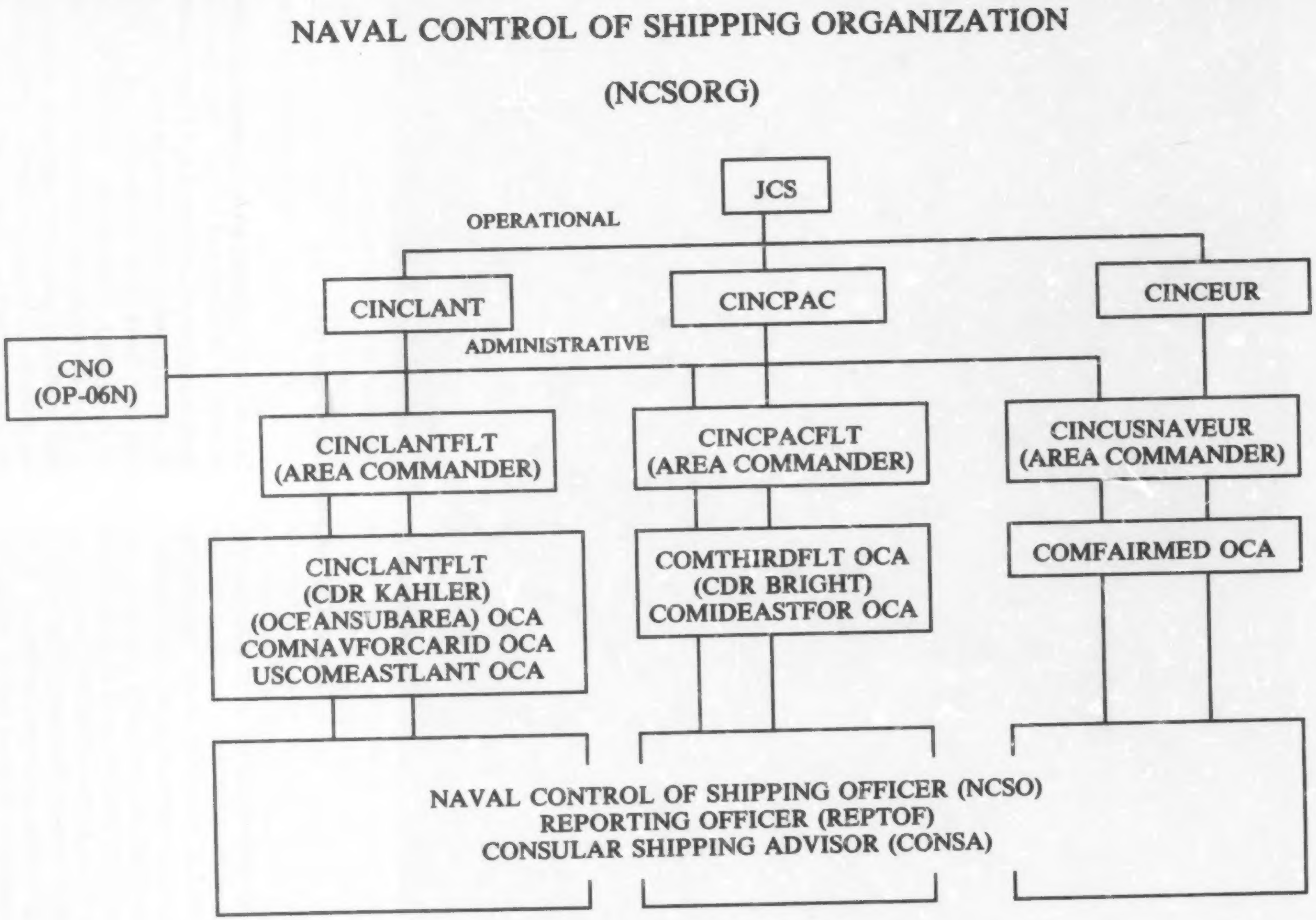
MSC AND NCSORG RESERVE UNITS

Missions of the MSC-sponsored and CNO-sponsored Naval Control of Shipping Organization reserve units fall into five general categories. Types of units and their missions include:

1. MSC Military Transportation Units (MSCMTU). Transportation units provide skilled people who board civilian-manned U.S. flag ships, or American-owned foreign-flag-registered merchant ships brought under U.S. control in an emergency, to assist in the control of troops or civilians being transported by sea. They also provide administrative support for commanders responsible for such movements.

2. Military Sealift Command Office (MSCO) Units. These reserve units augment Military Sealift Command offices or establish new offices in designated areas of the world—areas where an MSC presence is required to handle increased ship traffic and activity. Functional responsibilities are comparable to those of existing MSC offices and include local control of MSC ships, Government-owned and chartered, as well as liaison with local shipping and Government officials. Typical tasks include conducting on- and off-hire ship surveys, providing husbanding assistance to ships visiting the area, and maintaining day-to-day working relationships with operating NCSORG units.

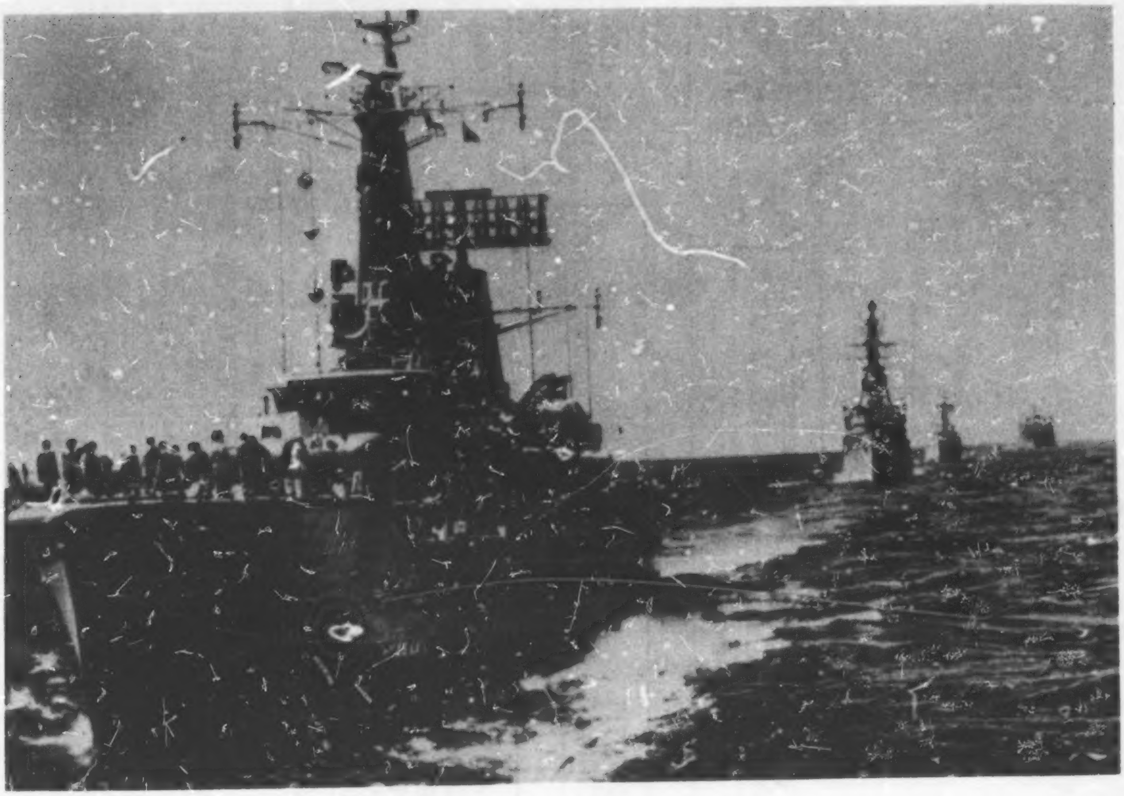
3. Military Sealift Command Headquarters (MSCHQ) Units. Such units will be activated to fulfill tasks generated by increased requirements levied on the command. Typical functions


NAVAL CONTROL OF SHIPPING ORGANIZATION

(NCSORG)

JCS
OPERATIONAL
CINCLANT
CINCPAC
CINCEUR
ADMINISTRATIVE
CNO (OP-06N)
CINCLANTFLT (AREA COMMANDER)
CINCPACFLT (AREA COMMANDER)
CINCUSNAVEUR (AREA COMMANDER)
CINCLANTFLT (CDR KAHLER) (OCEANSUBAREA) OCA COMNAVFORCARID OCA USCOMEASTLANT OCA
COMTHIRDFLT OCA (CDR BRIGHT) COMIDEASTFOR OCA
COMFAIRMED OCA
NAVAL CONTROL OF SHIPPING OFFICER (NCSO)
REPORTING OFFICER (REPTOF)
CONSULAR SHIPPING ADVISOR (CONSA)

Figure 12-26.—NCSORG flow chart.



30.236

Figure 12-27.—A convoy operation at sea.

performed by reservists assigned to headquarters units at the command, area command, or subarea command level are procuring ships, coordinating maintenance and repair of MSC Nucleus Fleet ships, scheduling and monitoring operations of dry cargo ships and tankers, and other functions performed at the headquarters level.

4. Naval Control of Shipping Office (NCSO) Units. NCSO units are comparable to MSC office organizations. They operate at designated locations worldwide, controlling the movement of merchant shipping so as to assure maximum protection of ships and crews. They also route ships in support of command and Navy missions. When activated, NCSO units report to the appropriate Navy fleet commander, not to MSC.

5. Convoy Commodore (CONVOYCOM) Units. Convoy commodore units are a primary Navy source of trained manpower for assignment as members of the support staffs of convoy commodores embarked aboard merchant-type or MSC-controlled fleet ships. Convoy commodores

30.237

Figure 12-28.—A convoy of ships during WWII.

are responsible for convoy operations designed to protect American or Allied shipping in an emergency or contingency situation. On mobilization, NCSORG units report to appropriate fleet commanders, not MSC, since they are CNO-sponsored organizations.

MSC AND NCSORG TRAINING

While MSC is responsible for determining training requirements necessary to make certain MSC-sponsored and NCSORG reserve units can swing into action at any time, the command works with Naval Education and Training Command in developing curricula and training materials, and in conducting and evaluating reserve training programs. Generally, training includes both individual (i.e., on-the-job and service schools) training and team training. Typical of the latter are special operational projects assigned a team of reservists by functional counterparts on that MSC staff. Specialized and nontechnical training, running the full gamut of courses available to Navy active duty personnel, also are available to members of the Ready Reserve. So are correspondence courses, active duty for training, and courses conducted by both MSC and area commands.

Mobilization billets within MSC are based on manpower requirements set forth in war plans. Officer billets are identified by Navy officer billet classification (NOBCs) codes and enlisted billets by Navy enlisted classifications (NECs). Officer billets available include those for reserve line, restricted line, limited duty, warrant, and staff corps officers. Enlisted billets are varied and

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Figure 12-29.—Reservist at work at COMSC.

challenging, particularly since enlisted personnel in MSC often operate in small units and are routinely called on to establish and maintain working relationships with members of a local shipping community.

A readiness problem for MSC is that enlisted reservists who have active duty MSC experience, or who are particularly well trained for an MSC or NCSORG billet, are not identified by a specific Navy enlisted classification. To compensate, commanding officers of MSC-sponsored or NCSORG Ready Reserve units are encouraged to make entries in enlisted service records of personnel qualified to serve as MSC administrative assistants.

MSC operations in the early portion of the decade of the 1980s were changing. That resulted in greater emphasis on both military and sealift readiness. A new sense of urgency was reflected by increases in the Ready Reserve billet authorization picture. The Naval Control of Shipping Organization doubled in strength, and the number of reservists authorized for MSC-sponsored units increased by 30 percent or more. Reasons were obvious; the wider range of sealift readiness responsibilities assigned to NCSORG—such as operation of fleet support ships, the Near Term Pre-Positioned Force and maritime prepositioning ships—and the realization that the most reliable source of uniquely trained personnel needed to immediately increase the capability of the Navy's sealift operating agency is the Ready Reserve.

SEALIFT TRAINING EXERCISES

Just as ships and other assets need to be exercised, the best training opportunity for people is that provided either by actual operations or realistic exercises.

MSC is a frequent participant in joint command post exercises that involve military specialists, civilian employees of the command, and members of MSC-sponsored and NCSORG reserve units. Those involved are the JCS; the Army, Navy, Marine Corps, and Air Force; the Maritime Administration; the Federal Emergency Management Agency; and other agencies. They match ships and shipping services with exercise-established requirements. Each readiness exercise is followed by an evaluation. Many of the readiness programs put into effect in the decade of the 1980s have resulted from lessons learned in command post exercises.

Sealift readiness is routinely evaluated in operationally focused tests; for example, the annual Defense Department REFORGER (Reinforcement of Forces in Germany) exercise. In REFORGER, MSC-controlled ships move equipment and supplies of military units from the continental United States to Europe. There the equipment is used by troops who have been deployed by air in NATO-sponsored maneuvers. Since 1976, the annual REFORGER exercise has included both sealift and airlift mobility operating agencies, MSC and MAC.

MSC uses the annual REFORGER exercise to evaluate capability of Ready Reserve Force ships. RRF ships (figure 12-30) also are activated for other occasions without advance notification. The capability of controlled fleet ships also is evaluated by the ships' participation in exercises.

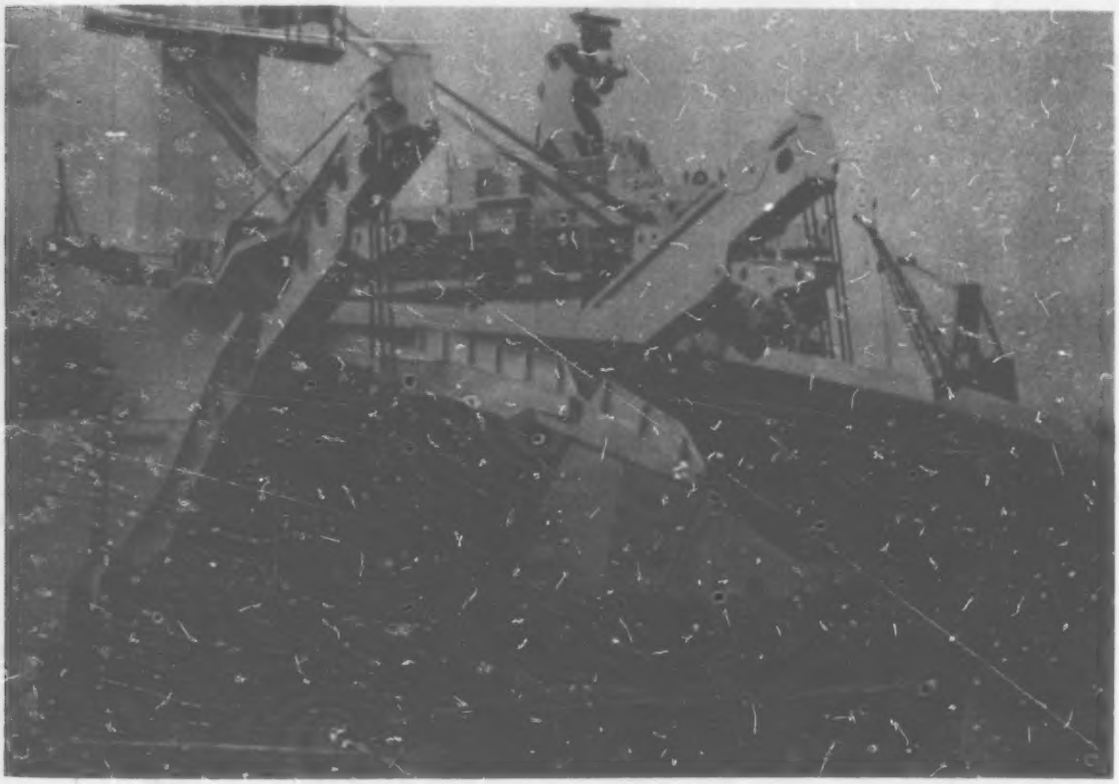

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Figure 12-30.—An MSC Ready Reserve Force (RRF) at an exercise.

MSC participates in several types of exercises designed to learn how to best load and discharge intermodal ships in environments where port facilities and support systems have been damaged or are nonexistent. Included are a series of offshore discharge of container (OSDOC) ships tests. Another series is known as logistics over the shore (LOTS). In each case, a variety of assets and systems available in the military inventory or from commercial sources is used. Included are floating cranes; lighters; commercial cranes mounted on LSTs, barges, and a variety of other platforms; mobile and fixed causeways; helicopters; and even tethered balloons.

An exercise of sealift readiness capability includes MSC support of amphibious operations by the Marine Corps, an operational test of the ability of *LASH* and *Seabee* barges to support military sealift needs, and a test designed to evaluate the capability of container ships to deliver ammunition. In a sense, MSC fulfillment of its normal peacetime sealift responsibilities is a continuing evaluation of its capability to support troop deployment and logistical resupply in an emergency. Peacetime operations provide opportunity for development of wartime capability.

MSC's modernization of its controlled dry cargo fleet in the early 1980s was accomplished by the acquisition of additional roll-on/roll-off ships (figure 12-31). Establishment and deployment of the Near Term Pre-Positioned Force, bareboat charter, and the purchase of two stores ships, from the British, that were specifically designed for underway replenishment of a combatant fleet are other examples of naval policies. MSC acquisition of ammunition ships, tugs, and

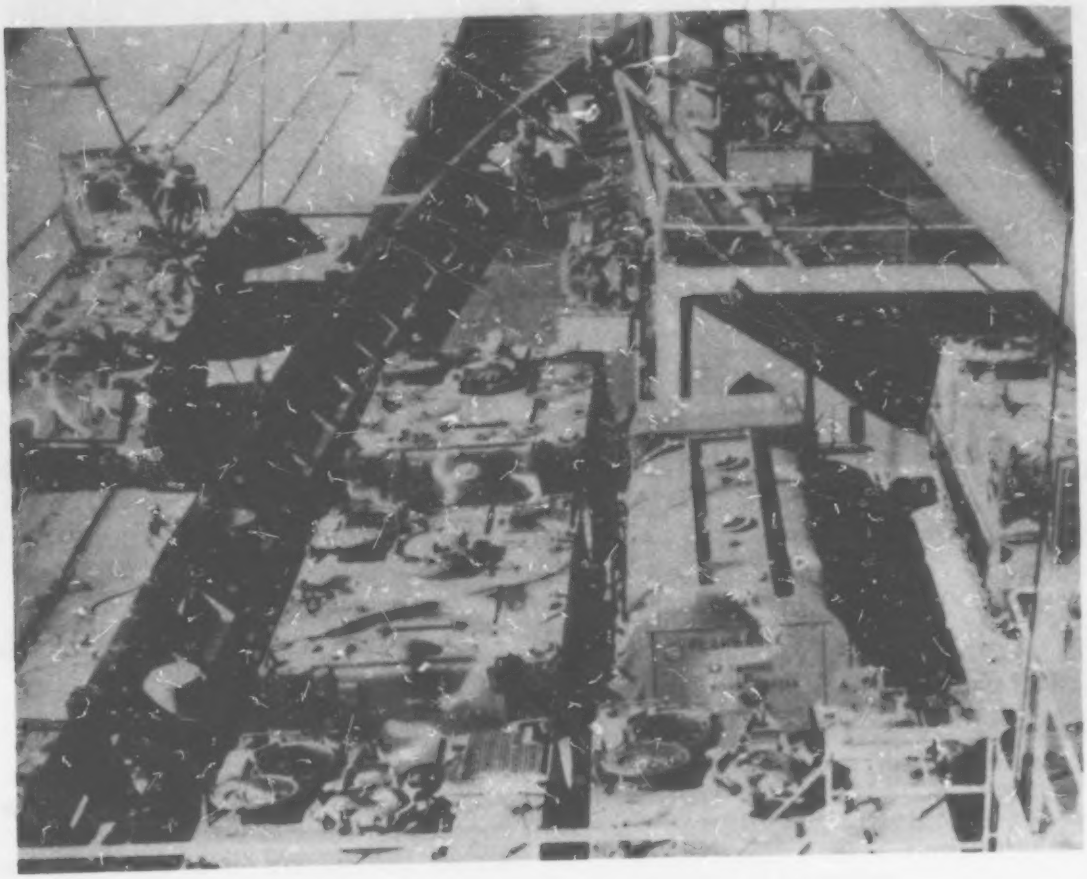

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Figure 12-31.—SS Illinois, a roll-on/roll-off ship.

oilers has increased fleet sustainability even more. A strong Navy fleet is essential to control of the seas, and sea control is vital for support of military forces deployed in the implementation of U.S. policy.

Military Sealift Command is involved in continuing Defense Department efforts to assure that sealift requirements of the Armed Forces are identified, that adequate shipping resources are available, and that both personnel and the ships they operate are ready for any type of emergency.

How much sealift? What degree of sealift readiness is required? Vice Admiral Kent J. Carroll, former director of logistics for the Joint Chiefs of Staff who became MSC Commander in 1981, responded to those questions when he told members of a congressional committee:

"The forces we need must be flexible enough to meet projected needs in NATO, the Western Pacific, Middle East, Southwest Asia-Persian Gulf Area, and from wherever else the challenge comes. These forces require land, sea, and air elements in the right proportion, supported and sustained for however long U.S. policy deems necessary."

SUMMARY

The attainment of U.S. national objectives and the effectiveness of U.S. domestic and international policies require seapower. An important element of seapower is sealift, a means of assuring mobility and the supply of military forces. Sealift has played an important role in security throughout the history of the United States. But it received additional emphasis in the early 1980s for two basic reasons. On one hand, shipping assets and human resources available during World War II were greatly reduced in size and capability. Conditions in Southwest Asia pose new threats to world peace—threats that demand that the United States be able to deploy and support military forces if it is to meet its international commitments while at the same time assuring its own security.

Considerable attention is being given modernization of the MSC Controlled Fleet, which has added newer and different types of ships. MSC's fleet support role also has expanded as part of an overall Navy effort to strengthen United States seapower. Greater attention is given sealift augmentation programs, including development of a Ready Reserve Force of dry cargo ships from the NDRF that can be put into operation within 10 days. The NDRF itself is being upgraded, and efforts have been initiated to strengthen the Defense Department Sealift Readiness Program that provides a source of ships in situations short of mobilization.

Other actions are focused on building new muscle for military sealift capability. A Near Term Pre-Positioned Force of ships was created, deployed to the Indian Ocean, then nearly doubled in size to support the Rapid Deployment Force. The Defense Department acquired very fast privately owned SL-7 container ships to be modified and held in reserve as a fast-response sealift force for support of emergency demands. Actions were initiated to acquire Maritime Pre-Positioning Ships—ships specifically designed to support U.S. forces in overseas areas.

Realizing that manpower and human skills are the keys to readiness, the Navy significantly increased the strength of MSC-sponsored Naval Reserve units and doubled the authorized strength of the Naval Control of Shipping Organization that MSC administers for the CNO in peacetime. The strengthened and modernized MSC Controlled Fleet, the Ready Reserve Force, and MSC and NCSORG personnel—military and civilian, active duty and reserve—regularly take part in joint sealift mobility exercises, in command posts exercises, and in a variety of tests designed to teach how to increase capability of overall sealift readiness assets. Those assets now include breakbulk ships, barge carriers, and roll-on/roll-off dry cargo ships. Versatility and flexibility have become hallmarks of a command that will not—indeed cannot—live on its reputation.

Those efforts and the emphasis given sealift readiness are expected to continue throughout the 1980s and in the ensuing years. Military readiness, mobility, and flexibility can be assured only by a combination of pre-positioning equipment and supplies, and assuring that airlift and sealift forces are adequate to meet all anticipated requirements. That mobility triad concept was the cornerstone of past Department of Defense programs to assure force readiness. It is the foundation for future readiness.

APPENDIX I

GLOSSARY

BAREBOAT CHARTER: This form of charter provides that the vessel is to be operated by the charterer who hires the crew, pays all expenses of operation and, in general, exercises command over the vessel as owner. Also known as a demise charter.

BERTH LINERS: Ships operating over established trade routes as common carriers providing service to all on a first-come, first-served basis at published tariff rates.

BILL OF LADING: A document by which the carrier acknowledges having received in good order and condition certain specified goods consigned to him by some particular shipper and binds himself to deliver them in similar condition—unless prevented by perils of the sea, fire, or enemies—to the consignees of the shipper at the point of destination, upon payment of the stipulated freight.

BLOCK BOOKING: The practice of arranging with a carrier for a number of containers required for movement of cargo when the quantity and the origin (loading point) of the cargo are known, but the final destination is not immediately known.

BOOKING CARGO: The reservation of allocated spaces in a ship to accommodate authorized cargo.

CARGO SPONSOR: Same as Shipper Service.

CARRIER: The carrier (of cargo) and his agents and contractors.

CHARTER PARTY, OR CHARTER: An agreement or contract by which a shipowner agrees to place a ship, or part of a ship, at the disposal of another person for the conveyance of goods to a particular place for an agreed sum of money.

CONTAINER AGREEMENT: An agreement, between MSC and a berth line operator, that provides the rates, terms, and conditions under which the operator will carry cargo in containers between CONUS inland points or ports and overseas ports or inland points over specified trade routes.

CONTAINER DETENTION: Government-ordered delay in commencement of drayage/line-haul or in unstuffing of containers at the destination when the total delay exceeds the total free time allowed for which the Government may be charged.

CONTAINER DIVERSION: When the destination of a container is changed after transit of the container begins.

CONTROLLED SHIPS: Government-owned or -chartered ships under the operational control of MSC.

DEADWEIGHT TONNAGE: The vessel's lifting capacity, or the number of tons (2,240 pounds) that a vessel will lift when loaded to its maximum legal draft.

DEMURRAGE: Detention of a ship (or other vehicle) beyond the "lay-days" allowed for the loading and/or discharging of cargo. A sum of money paid for detention of a ship.

FREIGHT: The price paid to a shipowner for the transportation of goods or merchandise by sea from one specific port to another.

GOVERNMENT BILL OF LADING: A document citing one or more specific notations to define the terms of affreightment and responsibility of the carrier when the affreightment arranged for is not subject to specifications of the existing shipping contract, or to berth term conditions payable, or to conference tariff rates.

HUSBANDING: The careful management of resources. Providing the necessary services and supplies for a ship.

LINE-HAUL: The movement of a container between the carrier's terminal at the port where the container is loaded on, or discharged from, a vessel and another place outside the commercial zone of a U.S. port city (or beyond the 10-mile radius of the city limits of a foreign city by means, other than the carrier's principal vessels, such as: highway, railway, canal or river, or in specific instances ferry or barge-ship system between ports).

LIQUIDATED DAMAGES: If a carrier fails to provide an empty container in sufficient time or fails to load on a ship a stuffed container received in adequate time he or she shall be liable for payment of liquidated damages computed at the same rate as detention charges.

LOCAL DRAYAGE OF CONTAINERS: The movement of a container between the carrier's terminal at the port where the container is loaded on, or discharged from, the vessel and another place within the commercial zone or modified zone of a U.S. port city (or within a 10-mile radius of the city limits of that foreign port city, by means other than the carrier's principal vessels, such as by highway or railway).

LONGSHOREMAN: A person who works at loading or discharging vessels either aboard ship or on the wharf or quay.

LONG TON: A unit of weight of 2,240 pounds, or 1,016 kilograms; sometimes called English ton.

MANIFEST: A detailed statement of a vessel's cargo.

MEASUREMENT TON: A measurement unit of 40 cubic feet used for goods shipped as measurement cargo.

NUCLEUS FLEET: United States Government-owned ships that have been assigned to MSC for administration and operation and for providing the nucleus upon which a larger controlled fleet may evolve.

OFFERING CARGO: Cargo is normally "offered" to a commercial carrier.

OUT-TURN REPORT: A report confirming discharge of cargo and describing its condition as a basic source for cargo loss and damage claims action.

PURSER: A clerical officer on board a vessel whose duty it is to take care of the ship's books, crew lists, all documents relating to the cargo, payrolls, and so forth.

REVERSE DETENTION CHARGES: If a carrier fails to remove a container from a Government facility within a specified period of time, after proper notification of readiness of the container, the carrier may be liable for the payment of reverse detention or storage charges.

SHIP CHANDLER: A merchant who supplies vessels with all kinds of stores. A dealer in cordage, canvas, and other articles required in the furnishing of a ship.

SHIPPER SERVICE: The component of the Department of Defense, or other agency, owning cargo or sponsoring passengers, and requesting arrangement for transportation to a destination.

SHIPPING AGREEMENT: An agreement between MSC and a berth line operator that provides the rates, terms, and conditions under which the operator will carry cargo over specified trade routes or between specified ports.

SHIP'S AGENT: A person or firm who transacts all business in a port on behalf of shipowners or charterers.

HORT TON: A unit of weight of 2,000 pounds. lso called American ton.

TEVEDORE: A firm (usually) employed in ading and unloading vessels. In return for a xed rate of remuneration, the stevedore provides e men, the gear, and all other adjuncts for the orking of cargo in or out of a vessel under the rection of, and subject to, the control of the aster.

TUFFING (OF CONTAINERS): The process of ading cargo into a container including any ecessary chocking, bracing, or dunnaging.

TIME CHARTER: A form of charter executed when a vessel is chartered for an agreed upon period of time, and giving the charterer the exclusive use of the ship.

VOYAGE CHARTER: A form of charter where the charterer has use of all or part of the ship. The scope of the charter is defined by geographic range of loading and of discharging rather than an agreed upon period of time. A variation of this form is the consecutive voyage charter.

APPENDIX II

MSC SHIPPING ABBREVIATIONS

AAFES:	Army and Air Force Exchange Service
AFL-CIO:	American Federation of Labor—Congress of Industrial Organizations
AGAFBO:	Atlantic and Gulf American—Flag Berth Operators
AIMS:	American Institute of Merchant Shipping
AMA:	American Maritime Association
APL:	American President Lines
APO:	Army Post Office
ASBCA:	Armed Services Board of Contract Appeals
ASNS&L:	Assistant Secretary of the Navy for Shipping and Logistics
BBC:	Bareboat Charter
BMO:	Brotherhood of Marine Officers
CAB:	Civil Aeronautics Board
CADS:	Containerized Ammunition Distribution System
CBL:	Commercial Bill of Lading
CCP:	Central Consolidation Point
CDS:	Construction Differential Subsidy
CINC:	Commander-in-Chief
CNO:	Chief of Naval Operations
COMSCLANT:	Commander, Military Sealift Command, Atlantic
COMSCPAC:	Commander, Military Sealift Command, Pacific
CONUS:	Continental United States
DAR:	Defense Acquisition Regulations
DFSC:	Defense Fuel Supply Center
DICOMSS:	Direct Commissary Support System
DLA:	Defense Logistics Agency
DOD:	Department of Defense
DOE:	Department of Energy
DSS:	Direct Support System
DTS:	Defense Transportation System
DWT:	Dead Weight Ton
EEO:	Equal Employment Opportunity
ETR:	Export Traffic Release
ETRR:	Export Traffic Release Request

FMC:	Federal Maritime Commission
FPO:	Fleet Post Office
GAA:	General Agency Agreement
GAO:	General Accounting Office
GBL:	Government Bill of Lading
ICC:	Interstate Commerce Commission
IFB:	Invitation for Bids
IMCO:	Intergovernmental Maritime Consultive Organization
IMIS:	Integrated Management Information System
ITO:	Installation Transportation Officer
JCS:	Joint Chiefs of Staff
JOPS:	Joint Operation Planning System
JPO:	Joint Petroleum Office
JRS:	Joint Reporting Structure
LASH:	Lighter Aboard Ship
LNG:	Liquefied Natural Gas
LRU:	Less than Release Unit
LSMP:	Logistics Support Mobilization Plan
MAC:	Military Airlift Command
MAGTF:	Marine Amphibious Group Task Force
MARAD:	Maritime Administration
MARISAT:	Maritime Satellite
MECOBO:	Military Export Cargo Ordering and Booking Office
MILSTAMP:	Military Standard Transportation and Movement Procedures
MILVAN:	Military Van
MOTS:	Military Ocean Terminals
MSC:	Military Sealift Command
MSCMTU:	Military Sealift Command Transportation Unit
MSCO:	Military Sealift Command Office
MTMC:	Military Transportation Management Command
NASA:	National Aeronautics and Space Administration
NATO:	North American Treaty Organization
NCSO:	Naval Control of Shipping Office
NCSORG:	Naval Control of Shipping Organization
NDRF:	National Defense Reserve Fleet
NIF:	Navy Industrial Fund
NOBC:	Navy Officer Billet Classification
NOS:	Not Otherwise Specified
NSA:	National Shipping Authority
NTPF:	Near Term Pre-Positioned Force
OBC:	Overseas Breakbulk Consolidation
OBO:	Ore/Bulk/Oil
ODS:	Operating Differential Subsidy

OMB:	Office of Management and Budget
OPORD:	Operation Order
OSDOC:	Offshore Discharge of Containers
PMA:	Pacific Maritime Association
POD:	Port of Debarkation
POE:	Port of Embarkation
POL:	Petroleum, Oil, and Lubricants
RDD:	Required Delivery Data
RDF:	Rapid Deployment Force
REFORGER:	Reinforcement of Forces in Germany
RRF:	Ready Reserve Fleet
RU:	Release Unit
SEABEE:	A large version of the LASH barge
SECNAV:	Secretary of the Navy
SPR:	Strategic Petroleum Reserve
SRP:	Sealift Readiness Program
TAC:	Transportation Account Code
TCMD:	Transportation Control Movement Document
TCN:	Transportation Control Number
TOA:	Transportation Operating Agency
TPFDD:	Time-Phased Force Deployment Data
TUCHA:	Type Unit Characteristics
ULCC:	Ultra Large Crude Carriers
VLCC:	Very Large Crude Carriers
WCAFBO:	West Coast American-Flag Berth Operators
WTCA:	Water Terminal Clearance Authority
WWMCCS:	Worldwide Military Command and Control System

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OFFICER-ENLISTED CORRESPONDENCE COURSE

MILITARY SEALIFT COMMAND

NAVEDTRA 10829-D1

Prepared by the Naval Education and Training Program Development Center, Pensacola, Florida

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INTRODUCTION

Your Officer-Enlisted Correspondence Course (OCC-ECC) contains a set of assignments and answer sheets. You participate in the OCC-ECC by reviewing the learning objectives, studying the text, and answering the questions. The text for your course is MILITARY SEALIFT COMMAND NAVEDTRA 10829-D1.

To satisfactorily complete this course you must earn a score of 3.4 or higher on each assignment. If you receive an assignment grade of less than 3.4, you will be required to repeat the assignment on a resubmit answer sheet.

It is recommended that you complete assignments as quickly as possible to derive maximum benefit from the course. You must complete at least one assignment per month to meet the requirements established by the Chief of Naval Education and Training.

You are prohibited from referring to or copying the solutions of others and from giving completed solutions or answers to anyone else. Noncompliance can result in suspension from the course by the administering activity and disciplinary action by Commander Naval Military Personnel Command.

After completion of the course, you may keep the text and assignments. Return them only in the event you disenroll or otherwise fail to complete the course. Directions for returning the course materials are given on the disenrollment form in the back of this OCC-ECC.

ERRATA

An errata may be included as part of the course materials. Errata are issued to correct detected errors in the text or the course. If an errata has been issued with this course, make the changes indicated. Do not change anything else. Any errors that you find not already covered by errata should be passed on to the Naval Education and Training Program Development Center via the final question form located in the back of this course.

BLACK DOT INFORMATION

A black dot (●) is used throughout the course to identify supplemental information or instructions for answering certain questions. You should read these black dot entries carefully; they will assist you in answering the questions.

YOUR COURSE IS ADMINISTERED BY THE NAVAL EDUCATION AND TRAINING PROGRAM DEVELOPMENT CENTER

You have been enrolled in this course with the Naval Education and Training Program Development Center, and your course will be administered through the Automatic Data Processing (ADP) system. You have been provided ADP-type answer sheets to submit in lieu of the conventional answer sheets contained in the back of this course. The ADP answer sheets must be used and may not be duplicated.

Your answer sheets will not be returned. However, you will be notified which questions were missed. In the event your score is less than 3.4 for an assignment, you will be sent a resubmit answer sheet to redo the assignment.

As you complete each assignment, mail the completed ADP answer sheet to the Naval Education and Training Program Development Center where it will be graded. A replacement ADP answer will be sent to you by return mail for each assignment you finish until the entire course has been completed. Make sure all the required information on each ADP answer sheet is filled in. Unless you furnish all the information required, you may not receive credit for your work.

The Naval Education and Training Program Development Center will issue you a letter of satisfactory completion to certify successful completion of the course (or a creditable unit of the course). To receive a course completion letter, follow the directions given on the course completion form in the back of this OCC-ECC.

NOTE: DO NOT USE THE COURSE COMMENTS PAGE AS THE ENVELOPE FOR RETURNING ANSWER SHEETS OR COURSE MATERIALS.

Envelopes and packing materials for returning answer sheets and course materials should be obtained locally. Use of franked envelopes and mailing labels is authorized.

RETURN YOUR ADP ANSWER SHEETS TO:

Commanding Officer
Naval Education and Training Program
Development Center, Code 324
Pensacola, FL 32559-5000

Questions concerning the courses administered by NAVEDTRAPRODEVCEN should be referred to the above address or by telephone: AUTOVON 922-1343, FTS 948-1343, or commercial (904) 452-1343.

NAVAL RESERVE RETIREMENT CREDIT

This course is evaluated at 10 Naval Reserve retirement points, which will be credited upon satisfactory completion of the entire course. These points are creditable to personnel eligible to receive them under current directives governing the retirement of Naval Reserve personnel.

Retirement point credit will not be granted for retaking this correspondence course, unless this course has been designated as a major revision.

COURSE OBJECTIVE

The course provides information about the basic aspects of the Military Sealift Command. It stresses the importance of ocean transportation to our national security and describes the establishment, mission, and organization of MSC. It discusses the administration and operational aspects of various MSC divisions, offices, and subordinate commanders.

Organizations and procedures presented in Navy training publications may change rapidly, making parts of the text operationally obsolete while they still retain much of their overall value for training purposes. Such textbooks continue in use in training programs until revision schedules permit their replacement with revised editions reflecting current policies and procedures.

Hence, students are cautioned that the textbook reflects the subject only as of the date of writing. Current official documents should be consulted for more information.

Naval courses may include a variety of questions -- multiple-choice, true-false, matching, etc. The questions are not grouped by type; regardless of type, they are presented in the same general sequence as the textbook material upon which they are based. This presentation is designed to preserve continuity of thought, permitting step-by-step development of ideas. Some courses use many types of questions, others only a few. The student can readily identify the type of each question (and the action required) through inspection of the samples given below.

MULTIPLE-CHOICE QUESTIONS

Each question contains several alternatives, one of which provides the best answer to the question. Select the best alternative, and blacken the appropriate box on the answer sheet.

SAMPLE

s-1. The first person to be appointed Secretary of Defense under the National Security Act of 1947 was
1. George Marshall
2. James Forrestal
3. Chester Nimitz
4. William Halsey

Indicate in this way on the answer sheet:

	1 T	2 F	3	4	
s-1	☐	■	☐	☐	___

TRUE-FALSE QUESTIONS

Mark each statement true or false as indicated below. If any part of the statement is false the statement is to be considered false. Make the decision, and blacken the appropriate box on the answer sheet.

SAMPLE

s-2. Any naval officer is authorized to correspond officially with any systems command of the Department of the Navy without his commanding officer's endorsement.

Indicate in this way on the answer sheet:

	1 T	2 F	3	4	
s-2	☐	■	☐	☐	___

MATCHING QUESTIONS

Each set of questions consists of two columns, each listing words, phrases or sentences. The task is to select the item in column B which is the best match for the item in column A that is being considered. Items in column B may be used once, more than once, or not at all. Specific instructions are given with each set of questions. Select the numbers identifying the answers and blacken the appropriate boxes on the answer sheet.

SAMPLE

In questions s-3 through s-6, match the name of the shipboard officer in column A by selecting from column B the name of the department in which the officer functions.

A	B
s-3. Damage Control Assistant	1. Operations Department
s-4. CIC Officer	2. Engineering Department
s-5. Disbursing Officer	3. Supply Department
s-6. Communications Officer	

Indicate in this way on the answer sheet:

	1 T	2 F	3	4	
s-3	☐	■	☐	☐	___
s-4	■	☐	☐	☐	___
s-5	☐	☐	■	☐	___
s-6	■	☐	☐	☐	___

Naval courses may include a variety of questions -- multiple-choice, true-false, matching, etc. The questions are not grouped by type; regardless of type, they are presented in the same general sequence as the textbook material upon which they are based. This presentation is designed to preserve continuity of thought, permitting step-by-step development of ideas. Some courses use many types of questions, others only a few. The student can readily identify the type of each question (and the action required) through inspection of the samples given below.

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Each question contains several alternatives, one of which provides the best answer to the question. Select the best alternative, and [illegible] the appropriate box on the answer sheet.

SAMPLE

s-1. The first person to be appointed Secretary of Defense under the National Security Act of 1947 was

1. George Marshall
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3. Chester Nimitz
4. William Halsey

Indicate in this way on the answer sheet:

TRUE-FALSE QUESTIONS

Mark each statement true or false as indicated below. If any part of the statement is false the statement is to be considered false. Make the decision, and [illegible] the appropriate box on the answer sheet.

SAMPLE

s-2. [illegible]

Indicate in this way on the answer sheet:

MATCHING QUESTIONS

Each set of questions consists of two columns, each listing words, phrases, or sentences. The task is to select the item in column B which is the best match for the item in column A that is being considered. Items in column B may be used once, more than once, or not at all. Specific instructions are given with each set of questions. Select the numbers identifying the answers and [illegible] the appropriate boxes on the answer sheet.

SAMPLE

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s-3. Damage Control Assistant — 1. Operations Department

s-4. CIC Officer — 2. Engineering Department

s-5. Disbursing Officer — 3. Supply Department

s-6. Communications Officer

Assignment 1

History of Ocean Transportation; Source of Strategic Mobility Challenges for Sealift--U.S. Foreign Policy and International Commitments

Textbook, NAVEDTRA 10829-D1: Pages 1-1 through 2-15

Learning Objective: Point out some of the important events, including certain associated persons and countries, of maritime history, and certain occurrences before and during the American Revolution and the War of 1812.

1-1. Maritime history actually began in the early 15th century when Europe gained knowledge of the compass and began explorations that led to discovery of new lands, including America.

1-2. It is considered likely that Egyptian mariners may have reached Western Europe in the third or second millennium B.C.

1-3. Which of the following events was a result of the first "standoff" battle at sea in 1501?

1. Spain became the dominant seapower
2. Portugal gained access to the East Indies spice trade
3. Arab nations began to expand their trade with Europeans
4. The Dutch gained a major share of the Middle East and Far East foreign trades

1-4. The Battle of Waterloo in June 1815 in which Napoleon was defeated marked the end of the

1. Spanish Armada
2. French rebellion
3. 100-year series of wars between the French and the English
4. attempts by the British, French, and Spanish to gain supremacy at sea

1-5. In the Orient, development of water transportation occurred at a somewhat slower pace than in the Mediterranean.

1-6. Prior to Columbus' voyages to the Western Hemisphere, a Portuguese explorer had rounded the Cape of Good Hope. Who was he?

1. Magellan
2. da Gama
3. Balboa
4. Diaz

1-7. The United States gained stature as a major seapower as a result of which of the following events?

1. Its capturing of British ships during the Revolution
2. Its victories in the War of 1812
3. Its accomplishments in World War II
4. The first circumnavigation of the globe by a U.S. ship

1-8. What was the status of the Colonial shipbuilding industry at the time of the American Revolution?

1. Well developed
2. Dependent on Great Britain for supplies and skilled manpower
3. Nonexistent

1-9. Although the Continental Navy began with only about 14 ships, at the end of the Revolution it had nearly equaled the strength of the British.

1-10. Historians generally agree that the Continental Navy played NO important role in the winning of the American Revolution.

1-11. The U.S. Navy was reestablished in 1794 primarily to

1. protect American shipping from pirate raids and seizures of ships and cargo
2. make certain that the British could not renew its war with the United States
3. take advantage of the nautical expertise developed during the Revolution
4. compete with European ships for a larger share of the import and export business

1-12. During the period following establishment of the U.S. Navy and the last decade of the 18th century, the status of the United States merchant marine changed significantly. Which of the following statements expresses one of those changes?

1. It almost disappeared from the seas
2. It tripled in size as U.S. trade increased dramatically
3. It was placed under the control of the U.S. Navy
4. Each of the above

1-13. The Dutch followed what country in control of the Far East foreign trade routes?

1. Spain
2. England
3. Portugal
4. Italy

1-14. As a result of the wars between England and the Netherlands from 1652 to 1674, England relinquished its claims to the West Indies.

1-15. The first ship commissioned into the U.S. Navy was the

1. *Constitution*
2. *United States*
3. *Hannah*
4. *Constellation*

1-16. At the beginning of the American Revolution there were about 2,300 ocean-going ships in the Thirteen Original Colonies. Of these, how many were built in the Colonies?

1. 1/2
2. 1/3
3. 1/4
4. 1/5

1-17. During the American Revolution, most marine operations were carried out by a fleet of privateers which numbered about how many vessels?

1. 1,000
2. 1,500
3. 2,000
4. 2,500

Learning Objective: Ascertain some of the historical events between 1800 and the era after the U.N. conflict in Korea, and descriptions of the U.S. maritime policy concerning the merchant marine and its development.

1-18. Between 1800 and 1900 the total value of U.S. imports and exports had been increased by a factor of more than

1. 10
2. 15
3. 20
4. 25

1-19. The first steamer to carry passengers on a regular commercial service was the

1. *Demologos*
2. *Savannah*
3. *Fulton*
4. *Clermont*

1-20. During World War I, German submarines sank Allied shipping at the rate of how many tons per month?

1. 900,000
2. 800,000
3. 700,000
4. 600,000

1-21. During World War II, Japanese shipping sunk by the U.S. totaled how many million tons?

1. 5
2. 7
3. 8
4. 9

1-22. During World War II, U.S. merchant ships made more than a maximum of how many Atlantic crossings?

1. 150,000
2. 200,000
3. 250,000
4. 300,000

1-23. During the U.N. conflict in Korea, the United States activated and used a significant number of ships from the National Defense Reserve Fleet.

1-24. The advent of jet cargo aircraft capable of carrying troops long distances in short periods has fully canceled any U.S. need for merchant ships to support future troop deployment.

1-25. Due to the shortage of merchant ships caused by German U-boat sinkings, the United States accomplished which of the following?

1. Developed a merchant marine capable of supporting its deployed troops
2. Designed Liberty and Victory ships that later turned the tide of the war
3. Began building merchant ships following passage of the Merchant Marine Act of 1916
4. Activated ships from the National Defense Reserve Fleet

1-26. Partially as the result of lessons learned in World War I, the United States maintained a fleet of merchant ships that enabled it to meet most demands for support of deployed forces after the beginning of World War II.

1-27. Rear Admiral William S. Sims developed the convoy system at the beginning of World War II.

1-28. The United States has a long and firmly established national maritime policy concerning its merchant marine. The policy is described by which of the following statements?

1. The merchant marine must carry most of the nation's import-export trade
2. The merchant marine will become a regular part of the Navy during wartime
3. The merchant marine should be able to provide military support in emergencies
4. The merchant marine should be as fully financed as possible by use of maritime subsidies

1-29. Which of the following is the best description of the development of the U.S. merchant marine?

1. It has grown during times of emergency and declined in the periods between emergencies
2. It has maintained stability and steady growth, largely as the result of subsidies
3. It did not exist as a dominant force in the development of America until after World War II
4. Its growth and stability have paralleled the growth and stability of the U.S. Navy

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Learning Objective: Point out the basic relationship between airlift and sealift, a national objective of U.S. foreign policy, and factors concerning U.S. international commitments including concern for Cuba, collective security, trade relations, strategic mobility, and sealift readiness.

1-30. The relationship of airlift and sealift is best described by which of the following statements?

1. Airlift is of greater value because of its more rapid response
2. They complement each other to assure mobility of U.S. forces
3. Sealift is more valuable because it can deliver greater volume

1-31. Which of the following is a requirement of the relationship of national objectives, U.S. foreign policy, and strategic mobility for U.S. Armed Forces?

1. An agreement between the Defense and State Departments in structuring mobility forces
2. The capability of mobility forces must be adequate to assure deployment and support of U.S. troops overseas
3. Mobility forces must be expanded in periods of emergency, and reduced in periods of lowered international tension
4. The establishment of a joint command, such as the RDF, to control mobility operating forces

1-32. The United States became a recognized world leader after it won its freedom from England.

1-33. The United Nations is made up of nations having similar interests and a mutual concern for maintenance of world peace.

1-34. Conventional warfare is best described by which of the following statements?

1. It is a war in which the adversaries adhere to the conditions set forth in the Geneva Agreement
2. It is a war fought primarily on land between two adversaries
3. It is a war in which nuclear weapons are not employed by combatants
4. It is a war which has been declared by the U.S. Congress and by the appropriate legislative bodies of the other participants

1-35. What is the primary cause for U.S. concern regarding Cuba?

1. Its relationship with the Soviet Union
2. Its proximity to the United States coastline
3. Its influence with Spanish speaking Latin American nations
4. The instability of its leadership

1-36. Which of the following are legitimate objectives of a nation?

1. To assure the well being and safety of its people
2. To protect its sovereignty and to defend its borders
3. To serve as an example of the ideals espoused by the nation
4. All the above

1-37. A collective security agreement is best described as

1. a group of nations agreeing to let the strongest be their leader
2. a Communist-type arrangement where policies are established by the dominant power
3. a pooling of resources and pledging to assist one another in the event of an attack or common threat
4. the acceptance of a common sovereignty among all participating nations

1-38. Instability in the economic and political arena generally is most desirable for dominant or super world powers because it allows them to project their power and influence more readily than would be possible if there were no potential threats to world peace.

1-39. The United States is involved with other nations in collective security arrangements, provides economic aid, and furnishes technical assistance primarily for which of the following reasons?

1. To serve its own interests and to promote its own security
2. Because those nations have asked for U.S. assistance
3. To deprive the Communists of any foothold in those nations
4. To fill the void left when Great Britain gave up its empire

1-40. The United States has become dependent on trade relations with other countries.

1-41. What are the three basic elements of United States strategic mobility strategy?

1. The Army, Navy, and Air Force
2. Airlift, sealift, and prepositioning of equipment and supplies
3. Airlift, sealift, and civil transportation
4. The NATO, SEATO and ANZUS agreements

1-42. The Department of Defense relies on the U.S. maritime industry for augmentation for which of the following reasons?

1. Defense policy is to not compete with the industry in peacetime
2. Defense assets and transport systems are inadequate by themselves
3. Sealift requirements are great, demanding, and in excess of military capability
4. All the above

1-43. The Department of Defense Sealift Readiness program is best described as a/an

1. contractually-based program in which private carriers agree to provide ships to meet demands of a non-mobilization situation
2. enhancement program launched by the Navy to improve its readiness
3. program to improve the readiness of the NDRF
4. program initiated by the Maritime Administration to increase merchant marine augmentation capability

1-44. The Soviet Union has an advantage over the United States in that it is self-sufficient and thus can devote a larger share of its annual expenditures to the development of military power.

1-45. During the era of the 1970s, the Soviet Union tended to

1. concentrate on domestic programs rather than seeking to project its power outside traditional areas where it exercises influence
2. develop its military power and to expand its influence in areas outside its own territory
3. reach an accord with the United States primarily because its world power was diminishing
4. maintain the status quo

1-46. The main thrust of the United States' support of its security interests in Western Europe is exerted through what means?

1. A strong Navy presence in the Atlantic Ocean and Mediterranean
2. The assurance that Western European nations continue to be dependent on trade with the United States
3. Participation in the North Atlantic Treaty Organization which serves both military and economic interests
4. The blocking of any effort by the Soviet Union to intimidate Western Europe governments

1-47. Which of the following statements best describes the relative importance of various regions where the United States is involved?

1. Western Europe is of greater importance than any other region
2. Asia is of greater importance than any other region
3. The Middle East is of the greatest importance to U.S. security
4. All of the above are of vital importance, and it is impossible to rank them in any order

1-48. The reduction of Soviet oil production is likely to cause the USSR to

1. reduce its efforts to exert influence worldwide
2. increase its efforts to exert its influence among oil-producing nations of the world
3. focus its efforts on the Middle East where rich deposits of oil and natural gas exist
4. emphasize agricultural development rather than further industrialization as a means of conserving its energy resources

1-49. Which of the following statements is an important reason why the United States has a strong interest in Africa?

1. About 40 percent of U.S. oil imports come from that region
2. The United States traditionally supports Third World development
3. Strong ties exist between American and African people
4. Early American colonialists developed strong trading relationships with African nations

1-50. Relationships between the United States and Western Hemisphere nations are primarily the result of the

1. proximity of Western Hemisphere nations and the political and economic ties that have been generated between those nations and the United States
2. American realization that the problems and objectives of Western Hemisphere nations are the same as those of the United States
3. fact that the United States has a large Spanish-speaking population that supports objectives of other Spanish-speaking nations within the Western Hemisphere
4. realization on the part of Western Hemisphere nations that the United States is the strongest military and economic power within the Hemisphere

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Learning Objective: Point out sealift capabilities, requirements, and functions; its role in U.S. security; objectives of MSC-sponsored organizations; and cause for the U.S. to honor its security pacts with other nations.

1-51. In his Fiscal Year 1981 posture statement, the Secretary of Defense indicated that new standards were being applied for assessment and design of military capabilities. What are two of the changes reported by the DOD?

1. To increase defense expenditures and the size of the Army
2. To use more demanding contingencies in planning, and to increase the capability of the military services to mobilize and respond speedily
3. To deemphasize previous reliance on bombers and ground forces while developing an effective means of deterring nuclear attacks that could produce a quick strike victory
4. To recognize that a strong Navy is the key to future survival, and that the Navy should provide the bulk of power projection capability and antinuclear defense measures

1-52. Sealift requirements levied upon the Military Sealift Command are the ultimate product of

1. Army missions as determined by the Joint Chiefs of Staff
2. the objective assessment of the overall capability of the maritime industry to provide sealift augmentation
3. decisions made by the Joint Chiefs of Staff, the agency responsible for determining the extent of United States commitment of forces
4. general war plans, contingency plans, and operational plans of all the military services, plus peacetime movement requirements of the services

1-53. Which of the following statements best describes the Near Term Prepositioned Force?

1. NDRF ships maintained by the Maritime Administration and berthed at U.S. ports on the West, Gulf, and East Coasts
2. Ships maintained in the Ready Reserve Force which can be put into operation within a 10-day period in an emergency
3. Ships to be constructed by the Maritime Administration and operated under General Agency Agreements in peacetime so that they will be immediately available in an emergency
4. Ships provided and manned by MSC that are preloaded with equipment and supplies to support early operation by troops of the Rapid Deployment Force

1-54. Which of the following statements best describes the ultimate role of sealift forces in assuring United States security?

1. To assure that equipment and supplies can be delivered to any point where troops may be committed in an emergency or contingency situation
2. To assure that the peacetime cargo of the military service is delivered at the lowest cost with the least amount of loss or damage
3. To provide capabilities that are not available from merchant marine assets
4. To serve as a backup to Air Force capabilities to deploy troops and sustain their operations in short-term emergencies

1-55. Acquisition of SL-7 container ships and construction of ships designed to serve as a maritime prepositioned force are part of the current shipbuilding plan. What is the intended purpose of these ships?

1. To assure continuing modernization and capability of the merchant marine
2. To provide jobs for shipyards so that the yards will be available for support of emergency merchant marine expansion
3. To increase the overall ship tonnage available to the Department of Defense
4. To help assure strategic mobility of U.S. forces and thus assure that national decision makers have a range of options in emergency situations

1-56. The ultimate objectives of MSC-sponsored Naval Reserve units and the Naval Control of Shipping Organization are to assure

1. the success of sealift operations in support of the deployment and supply of the Armed Forces
2. expansion capabilities of MSC and the Navy in an emergency
3. that the expansion of active duty forces can be accomplished in an effective and orderly manner and that called-up reserve units are combat ready
4. that there is an adequate supply of trained manpower to augment and replace active duty personnel who may not survive nuclear attacks by an enemy nation

1-57. While the Military Sealift Command has an active role in providing peacetime sealift and in maintaining liaison with the merchant marine, command functions will be limited in an actual wartime situation since the Maritime Administration will control the use of privately owned shipping required to carry the bulk of military cargo.

1-58. It is very unlikely that the United States will, in the near future, withdraw from its security pacts with other nations. Why?

1. United States investment in foreign countries is at an all time high
2. The United States' dependence on world trade, imports and exports, is likely to continue
3. The security of the United States depends upon the political and military help from allied nations

Assignment 2

Military Sealift Command Organization, Missions, and Relationships

Textbook, NAVEDTRA 10829-D1: Pages 3-1 through 3-29

Learning Objective: Describe the organization, functions, and elements of the Military Sealift Command.

2-1. The Navy's single manager for Department of Defense ocean transportation is the

1. Chief of Naval Operations
2. Commander of MSC
3. Chief of Naval Personnel
4. Secretary of the Navy

2-2. The MSC Controlled Fleet includes which of the following groups of ships?

1. Government-owned ships
2. Bareboat-chartered ships
3. Time-chartered ships
4. All the above

2-3. The MSC function of directly supporting the worldwide Navy fleet includes which of the following operations?

1. Replenishing a repair ship with spare parts
2. Delivering equipment and supplies to military units stationed overseas
3. Carrying technicians in support of missile test centers
4. Both 2 and 3 above

2-4. The Near Term Pre-positioned Force (a) consists mainly of what kind of ships and (b) can support how many Rapid Deployment Force troops in addition to several air wings?

1. (a) Tugs and repair ships
   (b) 5,000
2. (a) Tugs and repair ships
   (b) 15,000
3. (a) Dry cargo ships and tankers
   (b) 5,000
4. (a) Dry cargo ships and tankers
   (b) 15,000

2-5. Which of the following is NOT a primary function of an area command?

1. Public affairs
2. Contracting for ships
3. Automated data processing
4. Supply

2-6. Which of the following MSC officers answers directly to the deputy commander?

1. Public affairs
2. Director of staff services
3. Personnel
4. Contracting

2-7. What branches of the Armed Forces manage MSC, MTMC, and MAC respectively?

1. Navy, Air Force, Army
2. Navy, Army, Air Force
3. Army, Navy, Air Force
4. Army, Air Force, Navy

Learning Objective: Describe MSC administration, management, and operation; including the purpose of its worldwide organization, its missions, responsibilities, and ships operated by private contractors.

2-8. When MSC renders emergency services requested by the Department of State through the DOD, what is the usual financial arrangement?

1. DOD bills the user and reimburses MSC
2. MSC bills the Department of State who either collects from the user or reimburses MSC from appropriated funds
3. MSC bills the user who pays MSC directly
4. DOD bills the Department of State who collects and reimburses MSC

2-9. Maintenance of the National Defense Ready Reserve Fleet is the responsibility of the

1. Military Sealift Command
2. Maritime Administration
3. Military Traffic Management Command
4. Coast Guard

2-10. Which of the following MSC commands operates ships?

1. MSC, Pacific
2. MSC, Mediterranean
3. MSC, Far East
4. MSC, Europe

2-11. Which of the following is NOT a transportation operating agency?

1. Military Sealift Command
2. Naval Ship Systems Command
3. Military Traffic Management
4. Military Airlift Command

2-12. To assure that MSC ships are maintained and meet ABS and Coast Guard standards, MSC relies primarily on services from which of the following activities?

1. U.S. commercial shipyards
2. Navy manned shipyards
3. Japanese and United Kingdom shipyards
4. The Naval Sea Systems Command

2-13. MSC operations are financed primarily by

1. Navy appropriations
2. Army, Navy, Marine Corps, and Air Force allocations
3. the Navy Industrial Fund
4. the Navy supplemental budget for sealift

2-14. The MSC worldwide organization is established for which of the following purposes?

1. To replace Navy transports during emergencies
2. To best meet the requirements of the Navy mission
3. To provide a fleet auxiliary force for the Navy
4. To assure MSC representation in major ports of the world

2-15. MSC procurement authority is established by which of the following instructions or regulations?

1. The Department of Defense Acquisition Regulation
2. U.S. Government procurement statutes
3. Department of Defense and Navy policy
4. All the above

2-16. Which of the following is NOT an assigned MSC mission?

1. Operation of Naval Fleet Auxiliary Force Ships
2. Development of a sealift capability to meet emergency requirements
3. Establishment of requirements for deployment and support of armed forces
4. Operation of scientific support ships

2-17. Membership of the so-called MSC Board of Directors includes which of the following officials?

1. The Navy Deputy CNO for Logistics
2. The Assistant Secretary for Financial Management
3. The Deputy Assistant Secretary for Sealift and Maritime Affairs
4. All the above

2-18. Which of the following activities does NOT generate sealift requirements levied on MSC?

1. Military Traffic Management Command
2. The "shipper services"
3. Joint Chiefs of Staff
4. Defense Fuel Supply Center

2-19. What are the two primary elements of the MSC Controlled Fleet?

1. U.S. Merchant Marine ships and National Defense Reserve Fleet ships
2. The nucleus fleet and chartered fleet
3. Government-owned ships and bareboat-chartered ships
4. Department of Defense ships and Department of Transportation ships

2-20. Normally, MSC nucleus fleet ships that historically have been operated by private contractors include which of the following groups of ships?

1. Point-to-point tankers
2. Bareboat-chartered ships
3. Time-chartered ships
4. General Agency Agreement ships

2-21. When contractors and mariners supplied by the unions are used instead of civil service employees to operate and man MSC-controlled ships, what advantage or disadvantage is realized by the unions?

1. Unions receive contributions to their pension and welfare funds
2. Unions gain control over transportation fees
3. Competition develops between the various unions
4. Unions lose control over pay increases and other benefits

2-22. An MSC manager may be confronted with an emergency decision with no time to refer the matter to higher authority. What help, if any, is available in such an event?

1. Transportation expertise from the local Navy command
2. Transportation expertise from maritime professionals
3. Assistance and advice from the local commercial shipping office
4. None

2-23. The assignment of specific responsibilities to MSC command functions and individuals is a purpose of what planning system in the IMIS system?

1. Developmental
2. Project
3. Program
4. Operational

2-24. For repair of its ships, MSC depends primarily on

1. Navy shipyards
2. Coast Guard facilities
3. commercial facilities
4. its own facilities

2-25. When MSC is unable to meet assigned sea transportation requirements, priorities are determined by the

1. CNO
2. Joint Deployment Agency
3. Joint Chiefs of Staff
4. Military Traffic Management Command

2-26. MSC ships generally meet standards established by whom?

1. American Bureau of Shipping and U.S. Coast Guard
2. Maritime Administration and the Federal Maritime Commission
3. CNO and the Navy Engineering Command
4. MSC Commander and the CNO

2-27. MSC is described as a "unique organization" for which of the following reasons?

1. It is the only Navy organization that is industrially funded
2. It is industrially funded and MSC mariners are members of the maritime industry
3. It is staffed primarily by civilians
4. It operates merchant-type rather than military-type ships

2-28. Which of the following is the title of a program MSC has initiated to improve its management procedures?

1. Integrated Management Information System
2. Intensive Management of Internal Sealift
3. Sealift Readiness Program
4. Sealift Enhancement Program

2-29. MSC can respond to requirements by non-Department of Defense agencies if such a request is approved by the

1. MSC Commander
2. Assistant Secretary for Shipbuilding and Logistics
3. Deputy Assistant Secretary for Sealift and Maritime Affairs
4. Department of Defense

2-30. MSC tanker operations are controlled by

1. MSC, Atlantic and MSC, Pacific
2. the Defense Fuel Supply Center
3. MSC headquarters
4. private contractors

2-31. The Federal Maritime Commission is primarily concerned with

1. protecting consumer interests
2. promoting the welfare of the merchant marine
3. implementing U.S. sealift policy
4. protecting the shipping interests of Federal agencies

2-32. What is the Civil Service policy with respect to mariners and the maritime unions?

1. A mariner may join a union only if the union takes a no-strike pledge
2. A mariner may join only with the approval of the respective MSC area commander
3. A mariner may join a union but may not be coerced to do so by the union or management
4. A mariner may join a union only if he/she was a union member before accepting a position with MSC

2-33. MSC appears to have considerable leverage with the maritime industry. Why?

1. Because MSC maintains a close working relationship with the Maritime Administration
2. Because the maritime industry is charged with maintaining a defense capability
3. Because about 85 percent of MSC's annual $1 billion revenue goes to industry
4. Because industry relies on the Federal Government for a majority of the industry's business

2-34. Which of the following sealift resources are available to MSC?

1. U.S. Merchant Marine ships and services
2. National Defense Reserve Fleet ships
3. Foreign flag ships and services
4. All the above

2-35. Which of the following is a main source of civil service mariners for MSC?

1. Graduates of State and Federal maritime academies
2. Experienced personnel separating from the U.S. Navy
3. Graduates of the U.S. Naval Academy and U.S. Coast Guard Academy
4. Graduates of the various "Ivy League" colleges in the U.S.

2-36. In MSC relationships with civilian shipyards, what is the basic policy governing procurement of shipyard services?

1. Allocating the work to U.S. Navy yards to assure that U.S. Coast Guard standards are met
2. Competitive procurement with awards going to the lowest, responsive offeror
3. Allocating the work to the yard designated by Naval Sea Systems Command
4. Awarding the work to the yard nearest to the current location of the ship

2-37. Which of the following is a primary problem facing MSC managers?

1. There is no assurance that civilian mariners can be relied on in an emergency
2. Private carriers can perform ship operating missions at less cost and with greater efficiency than can civil service employees
3. The command has no control over the scope of operational requirements levied on the command
4. MSC operates worldwide which severely limits its control over its own operations

2-38. The three primary functions of MSC are described as

1. procurement, engineering, and planning
2. cargo delivery, fleet support, and scientific support
3. fleet support, scientific support, and procurement
4. sealift, transportation, and contracting

2-39. In addition to other duties, the MSC Commander serves as the program sponsor for the Naval Control of Shipping Organization.

2-40. Which of the following is a primary reason for the assignment of fleet support ships to MSC?

1. The ships will be operated by highly trained military personnel
2. The cost of ship maintenance and repair is minimized because the work is done at naval shipyards
3. Smaller civilian crews are required to operate the ships, and cost of operation will be less
4. The ships are designed for the purpose for which they will be used thus eliminating costly conversions

2-41. The scheduling of maintenance and repair of MSC nucleus fleet ships is a responsibility of the

1. Chief of Naval Operations
2. MSC management
3. respective ship captains
4. Coast Guard

For items 2-42 through 2-44, select from column B the MSC staff members who perform the duties in column A.

A. Duties	B. Staff Members
2-42. Serves as type commander for the MSC nucleus fleet	1. MSC deputy commander
	2. Director of operations
2-43. Controls staff organizations involved in fleet operations	3. MSC commander
	4. Respective area commander
2-44. Prepares plans for emergency support of deployed forces	

● The following alternatives are for items 2-45 through 2-49.

1. Assistant Chief of Staff, Administration and Manpower
2. Assistant Chief of Staff, Fleet Operations
3. Assistant Chief of Staff, Engineering
4. Assistant Chief of Staff, Comptroller

2-45. Tanker and other logistic support ships operate under the direction of which ACOS?

2-46. Command activities pertaining to maintenance and repair of ships are directed by what ACOS?

2-47. Command inspection programs are conducted under the direction of what ACOS?

2-48. To develop command budgets and ensure that the budgets are followed is a responsibility of what ACOS?

2-49. What ACOS is responsible for developing special programs concerning operations in support of allied fleets?

Learning Objective: Identify MSC office code symbols, the official responsible for the operation of the Naval Fleet Auxiliary Force, and a main function of the contracting ACOS.

For items 2-50 through 2-52, select from column A the office code symbol for each officer in column B.

	A. Symbols	B. Officers
2-50.	M-00	1. Maritime affairs officer
2-51.	M-00M	2. Equal employment opportunity officer
2-52.	M-00E	3. MSC Commander
		4. Engineer officer

2-53. The officer who advises the MSC Commander with respect to methods and procedures for special projects is identified by what code symbol?

1. M-3R
2. M-03
3. M-01D
4. M-00I

2-54. Operation of the Naval Fleet Auxiliary Force is a responsibility of the

1. assistant chief of staff of fleet operations
2. director of operations
3. assistant chief of staff of engineering
4. director of staff services

2-55. Which of the following is a function of the contracting ACOS?

1. Makes necessary reviews to ensure that procurement practices are in accordance with DOD policy
2. Provides office facilities and services to headquarters staff
3. Monitors the acquisition of ships and shipping services
4. Prepares specifications for the procurement of equipment and supplies.

Assignment 3

U.S. Maritime Industry; Maritime Legislation

Textbook, NAVEDTRA 10829-D1: Pages 4-1 through 5-9

Learning Objective: Identify the role and long-term trends of the U.S. maritime industry including the number of Government-owned ships available in 1981 and the percent of tankers owned by independent shipping companies at the end of 1970.

3-1. The U.S. maritime industry plays an important role in supporting which of the following U.S. commitments?

1. Economic objectives
2. Military objectives
3. Implementation of foreign policy
4. All the above

3-2. Which of the following statements best describes long-term trends in the U.S. privately owned merchant fleet?

1. The merchant fleet has been strongest in peacetime, but was weakened during major U.S. conflicts with other nations
2. The merchant fleet has grown rapidly during periods of national emergency or crisis, and has been allowed to deteriorate in between-war periods
3. The merchant fleet has continued to carry about the same percentage of U.S. oceanborne commerce in peacetime, with cargo peaks occurring during wars or national emergencies
4. Strength of the merchant fleet has fluctuated directly in response to the amount of subsidy and assistance provided by the Federal government

3-3. With the advent of jet cargo aircraft, it is highly unlikely that oceangoing ships will play a significant role in support of U.S. military forces during any future emergency.

3-4. The question of whether or not the United States needs a privately owned merchant fleet was decided clearly and finally with passage of the Merchant Marine Act in 1936, which established goals for the U.S. merchant fleet.

3-5. Despite the fact that the privately owned U.S. merchant fleet has fewer ships at the beginning of the 1980s than in the 1960s, the deadweight tonnage or carrying capacity of the fleet increased.

3-6. Of the U.S. Flag, merchant-type ships available in 1981, how many Government-owned ships were in operation?

1. 32
2. 153
3. 254
4. 864

3-7. Near the end of 1970, independent shipping companies owned approximately what percent of the world's tankers in operation?

1. 20
2. 30
3. 50
4. 60

Learning Objective: Describe types, designs, uses, characteristics, advantages, and disadvantages of MSC ships including the shipping company that ranks first in U.S. Flag carriers and the carrier with the largest number of ships.

3-8. Which of the following is the best description of a breakbulk ship?

1. One that permits vehicles to drive onto the ship
2. One that has deep holds that are loaded through hatches
3. One with cells that hold containers of specific sizes
4. One that has a capacity of at least 600,000 bale cubic feet

3-9. Which of the following factors is an advantage of breakbulk ships that is particularly useful to the military?

1. The speed of the ships
2. The size of the crew required to operate a ship
3. The ability to accommodate drive-on vehicles
4. The ability to carry almost any type of dry cargo

3-10. Which of the following types of ship designs is NOT an example of a specialized carrier with a high productivity potential?

1. Container ship
2. Very large crude carrier
3. Breakbulk ship
4. Liquefied natural gas carrier

3-11. Descriptions of the maritime industry as having become "capital intensive" rather than "labor intensive" refer primarily to the

1. industry's compensation for shortages of skilled mariners caused by the automation of ships and support systems which reduces crew size and labor costs
2. increased costs of ship operation that resulted from rapidly rising fuel costs in the 1970s and early 1980s
3. higher investment required for construction of ships in U.S. yards as required by law, plus greater labor costs resulting from union's pushing for and securing highly favorable labor-management agreements
4. high capital investment in specialized ships and support systems, as well as automation that is required to increase productivity and improve competitiveness of merchant fleet ships

3-12. When used in reference to containers or capability of ships to carry containers, the term TEU means

1. tariff, each unit
2. twenty-foot equivalents
3. total equipage units
4. total equivalent units

3-13. Deadweight tonnage (DWT) of a ship is best defined as the

1. total weight of ship and cargo
2. tons of cargo a ship can carry at its design draft
3. weight of the water displaced by a ship when at its design draft
4. total weight of the ship and cargo less the weight of the water displaced

3-14. Two trends that are evident in the intermodal delivery of oceanborne cargo are given in which of the following phrases?

1. Expanded construction of self-sustaining ships and greater use of diesel-driven ships
2. Carrier reliance on leasing containers and other equipment, and use of feeder ships to reduce ports of call for large container ships
3. Carrier procurement and control of containers, trucks, and support systems to increase competition, and weakening of the conference system
4. Standardization of ships to carry 40-foot boxes rather than a variety of sizes, and a comparable thrust to standardize container ship designs

3-15. The design designator of a certain ship is C-4S60A. Select the letter or number that indicates (a) the length of the ship, and (b) the type of propulsion.

1. (a) 6, (b) A
2. (a) 4, (b) S
3. (a) C, (b) 6
4. (a) S, (b) 4

3-16. Which of the following vessels lack high potential for support of military forces in the initial phases of troop deployment and logistical support of those troops?

1. Seebee barge carriers
2. Breakbulk ships
3. Large tankers, 100,000 DWT and up
4. Small tankers, under 50,000 DWT

3-17. Which of the following is a functional description of roll-on/roll-off ships?

1. Excellent for military support in emergencies, but less attractive for efficient peacetime carriage of commercial trade
2. Specialized ships designed only for the carriage of wheeled vehicles
3. Excellent for peacetime and wartime use because of their fast turnaround time and unencumbered interiors that allow for high utilization of space
4. Great flexibility for both the military forces and for serving routes where commercial cargo is substantial in volume and varied by type

3-18. Which of the following kinds of ships are generally active in the U.S. Great Lakes fleet?

1. Partial container ships of the President Adams type
2. Ore carriers and tankers consisting of ship types not likely to be required in an emergency
3. RO/RO ships of the Seabridge type
4. Combination container and automobile carriers specially designed for Great Lakes use

3-19. Why is the Seabee design barge carrier especially useful to MSC?

1. Its cost of operation is much less than that of other type carriers
2. It is faster than a container or breakbulk ship
3. It can accommodate oversize cargo and can handle a wide variety of cargo types
4. It is self-sustaining and serves well as a feeder ship

3-20. Slow speed and limited maneuverability are disadvantages of oceangoing barges.

3-21. A clean product tanker carries which of the following kinds of cargo?

1. Pure crude oil, such as that found in Saudi Arabia
2. Grains and other dry bulk products
3. Processed agricultural products such as molasses and vinegar
4. Refined petroleum products

3-22. Which of the following information is a major disadvantage of the integrated tug and barge systems put into operation by U.S. companies in the seventies?

1. Inability to carry different types of cargo
2. Limited cargo volume they can carry
3. Limited maneuverability
4. High cost of operation per ton of cargo

3-23. What U.S. Flag carrier controls the largest number of ships?

1. Military Sealift Command
2. United States Lines
3. American Atlantic Lines
4. Sea-Land

3-24. As of this writing (1982), what shipping company ranks first in U.S. Flag carriers of bulk liquid chemicals?

1. Military Sealift Command
2. Keystone
3. Trinidad
4. Crowley Maritime

3-25. The title "Drug-store Parcel Tanker" applies to ships that carry which of the following kinds of cargo or personnel?

1. Containers of various sizes, barges, and vehicles
2. Fuel for the military and military personnel
3. A variety of chemical products
4. A variety of supplies and fuels for the military

Learning Objective: Describe the U.S. merchant fleet with respect to tanker operating procedures and personnel functions, purpose of U.S. subsidies, and ship organization into compartments.

3-26. The operating procedure for most independent tanker operating companies is to serve which of the following kinds of trade?

1. Coastal only
2. Worldwide only
3. Coastal and worldwide
4. U.S. and allied only

3-27. In 1980, the marine department of the Exxon Company represented approximately what percent of the U.S. Flag tanker fleet?

1. 5
2. 9
3. 10
4. 14

3-28. In a typical ship-operating company, what staff personnel supervise the functions of the stewards department?

1. Marine
2. Operations
3. Engineering
4. Supply

3-29. Subsidies paid U.S. carriers by the Federal Government generally have been designed to

1. assure carrier profitability and, thus, make certain that privately owned ships are available for augmentation of the military
2. ensure that American business institutions can deliver U.S. exports worldwide at competitive cost
3. maintain U.S. supremacy as a major maritime power in the world community
4. offset cost differentials between U.S. and foreign carriers and, thus, assure U.S. competitiveness

3-30. The privately owned U.S. tanker fleet at the beginning of the 80s is best described by which of the following statements?

1. The tankers are relatively modern, but limited in size, and owned primarily by oil companies
2. The tankers are obsolete, carry a limited percentage of U.S. imports, and independent companies control most of the tanker fleet ships
3. The fleet is composed almost entirely of small tankers since those over 100,000 DWT cannot enter continental U.S. ports
4. The fleet depends on U.S. subsidies, on cargo preference legislation, and on expanded military charter of the tankers for its continued existence

3-31. Most of the U.S. Flag carriers are organized to operate a variety of ship types in worldwide trade rather than specializing in one type of operation.

3-32. Since World War II, dry bulk operators have been among the most prosperous types of the U.S.-Flag-ship-operating companies primarily because of a growing United States dependence on foreign raw materials to sustain the nation's technology.

3-33. Ships currently operating in the U.S. merchant fleet are generally manned by smaller crews than were World War II ships and are more highly automated.

3-34. Ships are generally organized into what three departments?

1. Licensed, unlicensed, and stewards
2. Deck, supply, and officers
3. Deck, engineering, and stewards
4. Officers, stewards, and deck hands

Learning Objective: Identify major unions and unions that represent civil service mariners.

3-35. The major unions representing unlicensed oceangoing mariners are the

1. Associated Maritime Officers, Atlantic Maritime Association, and Pacific Maritime Association
2. MEBA Districts Nos. 1 and 2
3. National Maritime Union and Seafarers International Union
4. Brotherhood of Marine Officers and Marine Staff Officers

3-36. Civil service mariners employed by Federal agencies, including MSC, are represented by which of the following unions?

1. MSO/SIUNA
2. GLLO
3. MFU
4. USW

3-37. PMA is the short title of a

1. union that represents MSC personnel in labor disputes
2. union that represents unsubsidized shipping company personnel in labor bargaining
3. maritime association that represents unsubsidized shipping companies in labor disputes
4. management association that negotiates with the unions in behalf of steamship terminals and stevedoring companies

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Learning Objective: Ascertain certain facts about ships and ship building, merchant marine training, and trade routes, including the difference between an open and a closed shipping conference.

3-38. In 1980, American shipyards (a) built how many merchant ships, and (b) how many of the ships were subsidized by the Federal Government?

1. (a) 27, (b) 19
2. (a) 27, (b) 16
3. (a) 16, (b) 10
4. (a) 16, (b) 8

3-39. Why has intermodalism resulted in court battles in some of our major ports?

1. Because the system requires longshoremen to acquire different skills
2. Because the system creates additional hazards for longshoremen
3. Because the system deprives longshoremen of jobs that are normally theirs and also results in revenue loss
4. Because the system makes the loading and unloading of ships more difficult and requires new and more sophisticated equipment

3-40. Training is provided merchant mariners by which of the following educational institutions?

1. State maritime academies
2. Union schools
3. Federal maritime academy
4. All the above

3-41. Tuition at the Federal maritime academy and in union-sponsored schools generally is free for the student mariner.

3-42. The Maritime Administration determines what world trade routes are essential to U.S. trade, and carriers serving those routes are, thus, eligible to apply for Federal subsidies.

3-43. What is the difference between an open and a closed shipping conference?

1. An open conference allows tanker operators, bulk carriers, and liner or tramp carriers to join; a closed conference does not
2. A closed conference allows only those carriers that serve conference trade routes to join
3. An open conference permits all carriers to join; a closed conference selects its membership
4. An open conference pertains to conferences opening their rolls to new members at established intervals, generally once each 5 years; a closed conference pertains to the period when conference rolls are closed to new members

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Learning Objective: Point out data and information concerning the United States shipping industry including the conference system, percent of cargo carried by U.S. Flag ships, the trade-in program, Federal support, and trends of the future to improve the maritime industry.

3-44. In the early 1980s, how did the United States rank with other nations in deadweight tonnage?

1. 7th
2. 9th
3. 11th
4. 14th

3-45. In 1980, approximately what percent of MSC's total cost of operation was for services rendered by private industry?

1. 75
2. 60
3. 45
4. 30

3-46. The conference system is a voluntary association of steamship companies engaged in a common trade and is designed to

1. establish trade routes
2. enforce the Shipping Act of 1916
3. stabilize competition by establishing freight rates for appropriate trade
4. ensure free navigation of the seas

3-47. Under the UNCTAD code, what percent of U.S. cargo would be carried by U.S. Flag ships?

1. 100
2. 80
3. 40
4. 20

3-48. Under the laws and agreements in effect as of this writing (1982), U.S. Flag ships may carry only about 50% of the U.S. Government cargo.

3-49. Which of the following acts provides assistance to the maritime industry by permitting ship owners to defer taxes on money in certain construction accounts?

1. Merchant Marine Act of 1936
2. Merchant Marine Act of 1970
3. Cargo Preference Act of 1954
4. Each of the above

3-50. The ship trade-in program was established by statute in what year?

1. 1936
2. 1954
3. 1963
4. 1972

3-51. Market development for the maritime industry is a function of the

1. Department of the Navy
2. Department of Energy
3. Maritime Administration
4. Interstate Commerce Commission

3-52. With respect to research and development, which of the following is a 1980 project that has Federal support?

1. Simplification of ship construction to reduce cost
2. The use of robots for welding in shipyards
3. Ways to reduce dependence on solvent-based coatings for ships
4. Each of the above

3-53. The trends of things to come to improve the maritime industry include which of the following considerations?

1. Replacement of diesel propulsion with more efficient power plants in new ships
2. A reduction in multilateral agreements between the United States and other trading nations
3. The establishment of shippers' councils for negotiating rates with conferences or carriers
4. Abolition of the Shipping Act of 1916

Learning Objective: Point out various legislative actions and their purposes, benefits, and impact on, the U.S. merchant marine and MSC; including the reasons for lack of competition by U.S. yards and the lack of passenger ship service, and a comparison of the Soviet and U.S. merchant fleets.

3-54. While treaties with Japan and China opened new markets for U.S. trade in the mid-19th century, competitiveness of the U.S. merchant marine was diminished because of which of the following factors?

1. A reluctance of the maritime industry to grasp the benefits of steam propulsion
2. A shortage of steel for construction of steel-hulled ships
3. A shortage of investment capital then heavily committed to railroad construction
4. All the above

3-55. The Military Transportation Act of 1904 was important because it was designed to

1. require industry to build ships needed by the military services for transportation purposes
2. require that U.S. Flag ships be used for the transport of military supplies and equipment
3. provide lucrative mail contracts for carriers lifting military cargo
4. establish the forerunners of MSC--the Naval Transportation Service, and the Army Transport Service

3-56. The Merchant Marine Act of 1920 has had a long-term impact on military-industry relationships since it served to

1. establish the National Defense Reserve Fleet
2. limit military capability to its own organic merchant fleet
3. require a merchant marine able to serve as a military auxiliary as well as being able to carry U.S. trade
4. set forth priorities for the military use of privately owned ships in peacetime and in an emergency

3-57. A primary reason for the transfer of the Maritime Administration from the Department of Commerce to the Department of Transportation is to keep ocean transportation policy separate and distinct from the overall transportation policy.

3-58. The basis for existing maritime legislation and the act that reaffirmed U.S. maritime policy, initiated maritime subsidy programs, established the Federal Maritime Commission and the Maritime Administration, and required that a Federal institution be established for training mariners is the Merchant Marine Act of what year?

1. 1936
2. 1928
3. 1904
4. 1812

3-59. Legislation that resulted in the construction of more than 40 merchant-type ships in the period between 1928 and 1936 was what Act?

1. Pre-World War II Ship Construction Act
2. Merchant Marine Act of 1928
3. Merchant Marine Act of 1904
4. Ship Construction Differential Subsidy Act of 1926

3-60. Ship operating and construction subsidies originally were intended to compensate carriers and shipyards for differences in costs between foreign and U.S. labor, differences that have since narrowed. A primary reason for lack of competitiveness on the part of U.S. yards in the 1960s has been

1. U.S. inability to secure shipbuilding orders from European and Far East countries
2. lower productivity of U.S. yards when compared to those in Europe and the Far East
3. lack of modernization in U.S. yards following the World War II building surge
4. refusal by U.S. yards to build ships in series and thus reap advantages from standardization of ships

3-61. Which of the following is a primary reason for the demise of passenger ship service?

1. Competition from airlines which can carry passengers faster at a lower cost
2. Overstaffing of passenger ships as the result of union pressures and ineffective maritime management
3. A sharp decline in numbers of people taking recreational tours or trips
4. Major accidents at sea that seriously eroded public confidence in the safety of huge passenger ships

3-62. Which of the following statements best compares the Soviet merchant fleet to that of the United States in the period between the end of World War II and the beginning of the 1980s?

1. The Soviet merchant fleet expanded greatly while that of the United States declined
2. In terms of deadweight tonnage, the relative ranking of the two fleets has changed very little although the number and type of ships they operate have changed
3. Both are heavily dependent on government assistance and each is effectively regulated by its respective government
4. Neither is an effective or reliable means of projecting the power of the nations they represent or influence relationships of those nations with other members of the world community

3-63. From the military standpoint, an important effect of the Merchant Ship Sales Act of 1946 is that it established the

1. National Defense Reserve Fleet
2. right of the Department of Defense to operate its own merchant fleet
3. Ready Reserve Force
4. single manager transportation concept that led to the establishment of MSC

3-64. The basic purpose of the Merchant Marine Act of 1970 was to

1. consolidate all previously passed maritime legislation
2. gradually phase out ship operating and construction subsidies
3. clearly define the role of the military in ocean transportation
4. encourage the construction of new merchant-type ships

3-65. In retrospect, it is apparent that the Merchant Marine Act of 1970 was important legislation in that it clearly achieved its intended purpose.

3-66. Attempts to pass maritime legislation in 1980 that would streamline existing legislation, consolidate much of that legislation, and clearly establish U.S. maritime policy--the so-called Omnibus Bill--failed primarily because

1. the Department of Defense resisted legislation that would make it dependent on the private sector for sealift augmentation
2. the maritime unions resisted technological innovations that would reduce the number of jobs available for mariners
3. there was no apparent need to change legislation on the books that was generally conceded to be both effective and timely
4. the maritime industry is made up of highly diverse interests and there was no common ground for agreement on many of the intended recommendations or changes

3-67. Both current legislation and policy are intended to limit Department of Defense construction or operation of merchant-type ships. What is a basic reason for such legislation or policy?

1. The inability of the service to attract and retain the types of people needed for maintenance and operation of merchant-type ships
2. A reluctance on the part of the military services to construct or operate noncombatant-type ships
3. Fears in the maritime industry that the Department of Defense would use such ships to compete with private sector ocean carriers
4. Fears in Congress and the industry that military construction and operation of merchant-type ships would result in sharp curtailment of subsidies and other assistance to the industry by the Government

3-68. The 1904 Cargo Preference Act requires that

1. military cargo moving in the domestic trade be carried by U.S.-owned ships
2. military cargo be allocated to private carriers to ensure an equitable distribution of that cargo
3. Government-owned ships be used to move Government-created cargo only when private carriers are unavailable or unable to provide needed services
4. only U.S. flag shipping be used to transport cargo for the military services

3-69. The 1936 Cargo Preference Act requires that

1. at least 50 percent of cargo generated by the U.S. Government be transported in privately owned U.S. flag commercial vessels if available
2. 40 percent of U.S. trade be carried in U.S. flag vessels; that 40 percent be allocated to trading partner nations, and that 20 percent be reserved for ships of other nations
3. the Government use privately owned carriers to the maximum extent possible in the carriage of government cargo
4. certain types of cargo, i.e., high value items and strategic items such as minerals and petroleum products, be carried only in U.S. flag ships

3-70. Which of the following is an activity in which MSC engages and which the Comptroller General has ruled is exempt from the provisions of the Merchant Marine Act of 1904?

1. Operation of fleet support ships
2. Procurement of privately owned ships by charter
3. Contracting for ocean tows
4. Movement of military ammunition

3-71. The Wilson-Weeks Agreement established the priorities for the use of sealift assets in the peacetime lift of military cargo worldwide. In what order would the below listed services or assets be used?

A. Charter of privately owned ships
B. MSC Controlled Fleet
C. Berth-line or scheduled commercial service
D. Foreign flag service or charter of foreign flag
E. Ships from the Ready Reserve Force

1. A, C, B, E, D
2. A, B, D, C, E
3. B, C, A, E, D
4. B, A, D, C, E

3-72. Various acts and policies established priorities for MSC in the use of private sector assets and require MSC to use U.S. flag shipping. How do these acts and policies affect MSC?

1. They severely limit MSC flexibility, particularly in peacetime
2. They are of little consequence since the Department of Defense can waive their provisions when necessary
3. They have no significant impact on the command since their provisions are easily met by MSC while carrying out normal operations
4. They have been primarily responsible for MSC's inability to provide mobility needed for support of deployed U.S. forces

3-73. What legislation first prohibited ships of foreign nations from engaging in the carriage of U.S. trade in U.S. coastal or domestic waters?

1. Cabotage Law of 1817
2. Merchant Marine Act of 1904
3. Reciprocity Act of 1928
4. Formal establishment of the U.S. Merchant Marine in 1812

Assignment 4

The Federal Maritime Commission Maritime Administration; U.S. Coast Guard; History of MSC Operations; MSC as an Element of the Defense Transportation System

Textbook, NAVEDTRA 10829-D1: Pages 6-1 through 8-17

Learning Objective: Point out important data and information concerning Federal agencies that have particular relationships with MSC and the maritime industry, including missions, functions, authority, responsibilities, how created, how they are represented overseas, and associated schools.

4-1. Which of the following activities is a Federal regulatory agency?

1. Maritime Administration
2. Maritime Subsidy Board
3. Office of Ship Construction
4. Federal Maritime Commission

4-2. The Federal Maritime Commission was created as an independent Federal agency by what legislative act?

1. The Shipping Act of 1916
2. The Merchant Marine Act of 1920
3. The Congressional reorganization plan of 1961
4. The Intercoastal Shipping Act 1933

4-3. The Maritime Administration is represented overseas by

1. foreign maritime representatives
2. the Senior Officer Present Ashore (SOPA)
3. the respective U.S. ambassador
4. business agents for the shipping lines

4-4. The Maritime Administration is a promotional rather than a regulatory agency.

4-5. The Federal Maritime Commission has the authority to perform which of the following functions?

1. Approve or disapprove noncompetitive carrier agreements
2. Set or suspend rates for domestic offshore carriers
3. Investigate complaints or discriminatory rates
4. Each of the above

4-6. The responsibility for determining the difference in cost of ship construction in foreign and U.S. yards, and that of operating ships with U.S. or foreign crews rests with the

1. Federal Maritime Commission
2. American Council on Shipbuilding
3. Maritime Subsidy Board
4. Office of Ship Construction

● Information for item 4-7. Functions performed by Federal agencies include the following:

a. Funding research and development programs
b. Performing marketing functions to assist the merchant marine
c. Reviewing and approving noncompetitive agreements by carriers
d. Promoting development of U.S. ports

4-7. The Maritime Administration is responsible for which of the following functions?

1. b and c only
2. b, c, and d
3. a and c
4. a, b, and d

4-8. Who operates the Federal maritime academy?

1. Department of Education
2. Maritime Administration
3. Federal Maritime Commission
4. Maritime Subsidy Board

4-9. In addition to a bachelor of science degree and a license as a third mate or third engineer, a graduate of the U.S. Merchant Marine Academy may also receive a

1. guaranteed assignment to a U.S. merchant ship
2. guaranteed assignment on an MSC-owned ship
3. guaranteed assignment with the Maritime Administration
4. commission in the Naval Reserve

4-10. In wartime, the Coast Guard becomes a part of the

1. Department of The Treasury
2. Department of The Navy
3. Department of The Army
4. Department of Transportation

4-11. In its relationships with the Federal Maritime Commission, MSC is involved mostly with

1. procurement and legal matters
2. the issuance of licenses and payment of subsidies
3. policies concerning foreign flag carriers
4. antitrust exemptions for common carriers

4-12. The Maritime Administration is now an element of what Federal agency?

1. U.S. Coast Guard
2. Department of Commerce
3. Department of Transportation
4. Department of The Treasury

4-13. Which of the following states does NOT support a maritime academy?

1. California
2. Louisiana
3. New York
4. Maine

4-14. The Maritime Administration-administered Capital Construction Fund allows ship owners to

1. borrow money from the Federal Government for ship construction
2. invest money in tax-free government securities
3. defer taxes on earnings lent to other companies for ship construction
4. defer taxes on earnings put aside for future use in ship construction

4-15. Which of the following is NOT a typical action involving MSC and the Maritime Administration?

1. Activation of an RRF ship for a no-notice exercise
2. Waiver of a ship subsidy needed to carry Defense Cargo
3. Exchange of data on ship characteristics and operations
4. Participation in hearings on ocean transportation rates

4-16. The Maritime Administration has no actual responsibility for long-term planning concerning sealift capabilities needed to support contingencies.

4-17. The Ready Reserve Force, Sealift Readiness Program, and Voluntary Tanker Agreement are best described as

1. programs designed to improve sealift's augmentation capability
2. Maritime Administration programs in support of its assigned missions
3. elements of the National Defense Reserve Fleet program
4. Navy-funded programs administered by the Maritime Administration

4-18. What is the primary wartime mission of the Coast Guard?

1. Coordination of port captain and port authority programs
2. Assuring free navigation of the seas
3. Port safety and security in support of strategic mobility of the Armed Forces
4. Inspection and certification of commercial vessels

4-19. The Coast Guard maintains how many district offices?

1. 8
2. 2
3. 12
4. 4

4-20. The Commandant of the Coast Guard must grant a waiver to a public vessel, such as Government-owned MSC ships, before the vessel can sail without Coast Guard certification.

4-21. Which of the following functions is NOT a responsibility of the Coast Guard in peacetime?

1. Enforcement of pollution laws
2. Training of Navy amphibious forces
3. Inspection and control of commercial vessels in U.S. waters
4. Movement, berthing, and anchorage of vessels within a port area

4-22. In the event that a public-owned vessel operated by MSC is needed to fulfill a national security requirement, a waiver for sailing that vessel without a Coast Guard certification can be approved by the

1. Commander of MSC
2. Commandant of the Coast Guard
3. Chief of Naval Operations
4. Maritime Administrator

4-23. The Sealift Readiness Program is what type of program?

1. Maritime Administration program under which ship owners agree to make specific ships available to the military during mobilization
2. Department of Defense program under which ship owners commit ships they own for callup in an emergency short of mobilization
3. Statutory program established by the National Security Act of 1948 and designed to strengthen readiness of the Armed Services
4. A program conceived and controlled by industry to demonstrate their commitment to the security of the United States

4-24. A Coast Guard port captain is directly responsible to the

1. head of the local port authority
2. head of the respective Coast Guard district
3. common carriers he or she represents
4. MSC area commander

4-25. Disputes between MSC and the Coast Guard involving ship inspections, casualties, and similar matters are governed by

1. agreements
2. Federal statutes
3. Navy regulations
4. DOD instructions

4-26. Civil service mariners employed by MSC are required to have Coast Guard documentation because public law requires such certification.

Learning Objective: Point out important events associated with MSC from the time of the organization through the United Nation's War in Korea.

4-27. MSC was organized in what month and year?

1. August 1949
2. October 1947
3. August 1970
4. January 1950

4-28. What was the original name of the Military Sealift Command?

1. Naval Transportation Service
2. Army Transport Service
3. Military Sea Transportation Service
4. Mobile Logistics Force

4-29. **The Secretary of the Navy is assigned the single manager responsibility for all Department of Defense ocean transportation. What was the reason for this assignment?**

1. **To end rivalry and promote unification within the Department of Defense**
2. **To eliminate overlapping and duplication of ocean transportation functions**
3. **To assure equality with the Air Force which was assigned the airlift mission**
4. **To ensure that the Navy has a traditional interest in ocean functions**

4-30. **From which of the below-listed organizations did MSTS receive its first ships?**

1. **U.S. Merchant Marine Academies and the Army Transport Service**
2. **U.S. Merchant Marine Academies and the Naval Transportation Service**
3. **Army Transportation Service and the U.S. Coast Guard**
4. **U.S. Coast Guard and the Naval Transportation Service**

4-31. In the first 18 months of the Korean war, the Maritime Administration activated a total of how many ships from the National Defense Reserve Fleet (NDRF)?

1. 130
2. 300
3. 602
4. 778

4-32. All ships activated from the NDRF in 1950 were in direct support of the United Nations operations in Korea.

4-33. **Opposition within the Navy to the acceptance of sealift and other nontransportation functions was based primarily on which of the following views?**

1. **That the Navy should perform only combat functions**
2. **That the new functions would compete for funding needed for fleet operations and other functions**
3. **That the Navy should not be a supporting service for either the Army or the Air Force**
4. **That the Navy lacked skilled manpower for the operation and maintenance of merchant-type ships**

4-34. **During the war in Korea, MSC routed cargo ships to Japan and then transshipped the cargo in smaller ships to Korea. The reason for this was the need to**

1. **turn cargo carriers around faster since delays increased the requirements for ships and shipping services**
2. **assure the safety of civilian mariners who do not operate ships in war zones**
3. **permit Japanese inspection of the cargo to ensure that no atomic weapons would be used in the Far East**
4. **decrease the chances of losing costly military gear to advancing North Korean forces**

4-35. **MSC-operated aircraft carriers were used primarily for**

1. **training Navy flight crews**
2. **maintaining and repairing helicopters and aircraft**
3. **delivering military aircraft and helicopters to U.S. and Allied Armed Forces**
4. **direct air support for convoy operations**

Learning Objective: Recount MSC operations in the 1950s including obligations as a result of contracts inherited from the Army, and special projects.

4-36. When MSC began operations, the Army space contracts that MSC would inherit specified which of the following actions?

1. To provide special project ships and crews to support the United States space program
2. To book military cargo to private carriers and pay for cargo delivery using existing commercial rates on the various routes
3. To assign berthing and docking rights in ports normally visited by its ships
4. To pay for specific amounts of space aboard commercial carriers even though the full amount of space was not used

4-37. A primary reason for MSC's installations of false decks in break-bulk dry cargo ships was to

1. segregate cargo by commodity
2. increase the capacity of the ship
3. allow cargo to be driven aboard or off ships by the use of ramps
4. facilitate the movement of military cargo through customs of foreign nations

4-38. Special project ship operations became a function of MSC in what year?

1. 1940
2. 1958
3. 1960
4. 1978

4-39. MSC operations in the Arctic area in the 1950s are best described as

1. MSC managed, and supported mostly by MSC ships and crews
2. MSC managed, but supported mostly by Navy ships and crews
3. Navy managed, but supported mostly by MSC ships and crews
4. Navy managed, and supported mostly by Navy ships and crews

4-40. MSC sealift operations throughout the 1950s are best described as

1. scheduled point-to-point delivery of military cargo worldwide
2. simultaneous fulfillment of peacetime logistical requirements and unique requirements stemming from world crises
3. a period of growth and a phase-out of ships and systems used during World War II
4. primarily troopship operations with cargo lift generally limited to movements not performed by private carriers

4-41. In the 1960s, which of the following tasks was not performed by MSC special projects or scientific support ships?

1. Support of the U.S. space program
2. Support of Navy and Air Force missile test centers
3. Oceanographic research
4. Intelligence gathering

Learning Objective: Recognize a major shipping problem in the initial phase of the war in Southeast Asia, areas in which MSC exercised leadership, lift requirements filled by foreign tankers in the 1970s and 1980s, and the progress of the tug and barge industry.

4-42. In the late 1970s and early 1980s, the MSC controlled tanker fleet was augmented by foreign flag tankers. Which of the following figures most closely represents the lift requirements fulfilled by the foreign flag tankers?

1. Less than 25%
2. More than 25% but less than 50%
3. 50% or more
4. Between 75% and 80%

4-43. The growing U.S. tug and barge industry has progressed significantly since its pioneering days. This progress, it is believed, is due mostly to the successful tug and barge operations in which of the following geographical areas?

1. South America
2. Middle East
3. Europe and Africa
4. Alaska and Southeast Asia

4-44. What was a major shipping problem in the initial phases of the war in Southeast Asia?

1. Shortage of heavy-lift ships for movement of tanks and other bulky cargo
2. Lack of funding for rapid expansion of the sealift capability
3. Inability of the services to project valid cargo delivery requirements
4. Long delay in discharging ships which increased the number of ships needed to do the job

4-45. Which of the following is an area in which MSC has not exercised leadership or set an example for the maritime industry?

1. Development and use of tanker coatings
2. Development and use of roll-on/roll-off ships
3. Development and use of container ships
4. Use of diesel engines for ship propulsion

Learning Objective: Point out when MSC revenue surpassed the $1 billion mark, definitions of terms associated with the maritime industry, advantages of certain types of ships, and the use of diesel engines in ships.

4-46. Annual revenue received by a Military Sealift Command first surpassed the $1 billion mark during what period of time?

1. The years it supported United Nations operations in Korea
2. The years it supported U.S. involvement in Southeast Asia
3. The post-Southeast Asia years
4. The period when MSC was first assigned responsibility for Naval Fleet Auxiliary Force operations

4-47. Which of the following phrases best describes "Charger Log"?

1. A series of tests designed to determine if civilian-manned ships can effectively support the Navy fleet
2. The annual exercise involving troop lifts to Europe for NATO maneuvers
3. A U.S. policy for the support of NATO; a policy based on the pre-positioning of equipment, airlifting of troops, and sealifting of material and supplies
4. A series of exercises to determine how intermodal ships can best be discharged in ports where support facilities are lacking

4-48. Which of the following is the best description of build and charter procurement?

1. Acquisition of ships built and financed by private parties on the strength of a Navy commitment to charter them when ready for operation
2. A means of allocating ship construction contracts to varied yards for the purpose of maintaining a base for wartime expansion
3. Unsolicited offers by private investors who express a willingness to construct ships for either MSC use or for updating the Ready Reserve Force
4. An MSC agreement with a private carrier or carriers who represent command interests in varied ship acquisition programs

4-49. What is a primary advantage of roll-on/roll-off ships for military support purposes?

1. Their relatively low cost
2. The short time needed to load, discharge, and turn the ship around
3. Their ease in conversion for use as container or breakbulk ships
4. Their high capacity and low cost of operation

4-50. Which of the following is a primary reason for MSC's installation of diesel engines in both existing and new ships?

1. To obtain better performance and longer life
2. To conserve energy and reduce fuel costs
3. To stimulate the use of diesels by the U.S. maritime industry
4. To provide a testing program for the use of diesel engines in the Navy fleet ships

4-51. Which of the following is a major reason for MSC's pioneering of roll-on/roll-off ship development and the charter of additional ships of this type?

1. Few ships of this type are operated by the maritime industry
2. Ships of this type are a relatively low-cost means of replacing breakbulk ships
3. Ships of this type are ideal for peacetime operations
4. Ships of this type are well suited for support of anticipated contingency requirements

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Learning Objective: Recognize the trend of MSC shipping services in the 1970s and after, and MSC's concern for the future.

4-52. What was the trend of MSC shipping services in the 1970s?

1. Both scheduled and tramp ship operations
2. Dry cargo, liquid cargo, and passenger movement
3. Tramp service only
4. Scheduled service only

4-53. How is readiness funding provided to MSC?

1. From the profits of the Navy Industrial Fund
2. Allocations by the military services from their transportation budgets
3. Through Federal appropriations by the Congress
4. Through appropriated Navy funds

4-54. MSC is concerned with the development of the maritime industry and the reserve fleet capability to augment its controlled fleet in an emergency or contingency situation. Which of the following statements expresses a reason for this concern?

1. Planning for emergency expansion is an assigned MSC mission
2. The MSC Controlled Fleet is too small to meet emergency demands
3. Past experience has proved that sealift is necessary to deliver the tremendous volume of cargo needed to support any major deployment of forces
4. Each of the above

4-55. Based on the past history of the Military Sealift Command, which of the following is highly probable with respect to MSC operations?

1. MSC cargo operations eventually will be phased out since airlift will become faster, cheaper, and more reliable
2. Direct support of the Navy will become the major mission of MSC with the services relying on scheduled liners for transportation support
3. While the fleet support mission will continue to expand, MSC must continue to focus major planning and operational efforts in development of capability to support all elements of DOD
4. Greater economy, efficiency, and reliability will be achieved in the Department of Defense by combining all military transportation assets into a single command

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Learning Objective: Point out principles and policies of the Defense transportation System (DTS) including the use of private carriers, differences between traffic management and transportation management, and definitions of terms peculiar to the system.

4-56. A description of the DOD container delivery system is contained in which of the following documents?

1. COMSC Instructions 7600.3
2. DA Pamphlet 55-3
3. MTMC Pamphlet 55-13
4. Merchant Marine Act of 1970

4-57. MSC ____A____ compete with
does, does not
privately owned ships which carry ____B____ percentage
a large, only a small
of the military dry cargo.

1. A - does, B - a large
2. A - does, B - only a small
3. A - does not, B - a large
4. A - does not, B - only a small

4-58. Traffic management differs from transportation management in that the former primarily involves the

1. acquisition of services and systems
2. flow of cargo between areas
3. controlling of ships and services
4. establishment of rates and collection of fees

4-59. Whether or not cargo requires special handling is determined by

1. the shipper
2. the activity receiving the cargo
3. the traffic manager
4. MSC exclusively

In answering items 4-60 through 4-65, select from column B the terms or abbreviations defined by the statements in column A.

A. Statements

4-60. Units of cargo less than 10,000 pounds are identified by the term

4-61. It is an agreement between the Government and a commercial carrier to move cargo

4-62. It provides detailed data concerning cargo being shipped through the Defense Transportation System

B. Terms

1. GBL
2. TCMD
3. LRU
4. DLA

A. Statements

4-63. It is a facility where military cargo is consolidated for shipment

4-64. It is a system for containerized delivery of ammunition

4-65. It is an activity that provides clearance for the shipment of military cargo to and from foreign ports

B. Terms

1. MECOBO
2. ETRR
3. CCP
4. CADS

Learning Objective: Ascertain services in MSC container agreements, DTS agencies, differences between MOTs and outports, and a description of the ITO officer.

4-66. The guidelines which establish standard Defense-wide procedures for documentation of military cargo are known as

1. UNCTAD - Uniform National Code for Transportation and Documentation
2. MILSTAMP - Military Standard Transportation and Documentation Procedures
3. MTMP - Military Traffic Management Procedures

4-67. Which of the following services may be included in MSC shipping and container agreements?

1. Longshoremen selection criteria
2. Control of atmospheric conditions
3. Stuffing and unstuffing of boxes
4. Both 2 and 3 above

4-68. What is a primary difference between an MOT and an outport?

1. Unlike an outport, an MOT is a facility managed by the military services which primarily handles breakbulk cargo
2. Unlike an outport an MOT is located in the continental United States
3. MOTs are operated by military personnel and units, outports are operated by civilians only
4. MOTs are operated by MTMC which has no personnel at outports

4-69. An Installation Transport Officer is best described as a

1. representative of MTMC assigned to installations to carry out traffic management functions
2. representative of a shipper of cargo through the Defense Transportation System who is responsible for a variety of transportation functions
3. representative of MSC who coordinates transportation matters with military installations and shippers

Assignment 5

MSC as an Element of the Defense Transportation System (continued); Worldwide MSC Operations in the 1980s; MSC Procurement

Textbook, NAVEDTRA 10829-D1: Pages 8-4 through 10-6

Learning Objective: Point out responsibilities and functions of the various activities associated with DTS and MSC, provisions of certain documents, and the conditional use of foreign flag carriers.

5-1. Responsibility for the operation of Military Ocean Terminals rests with the

1. MTMC worldwide
2. MTMC within the continental United States and as designated by theater commanders overseas
3. Military Sealift Command worldwide

5-2. DFSC is the agency responsible for procurement and distribution of which of the following products?

1. Fuel for all the military services
2. Support material and equipment for the Armed Forces
3. Commissary and troop supply items
4. All the above

5-3. MSC tanker operations are controlled from what activity(ies)?

1. MSC area commands
2. Atlantic or Pacific Fleet headquarters
3. MSC headquarters
4. Subarea commands or MSC offices in the area where tankers are assigned

5-4. JPOs are responsible for

1. receipt and consolidation of service fuel requirements overseas
2. procurement of supplies for all the military services
3. the programming of funds and acquisition of assets for all three TOAs
4. making air and sea travel arrangements and providing tickets for personnel of all services

5-5. Booking military cargo with commercial ocean carriers is a function of the

1. Military Traffic Management Command
2. Military Sealift Command
3. Installation Transportation Officers
4. shippers

5-6. Most military dry ocean cargo moves under the provision of

1. Government bills of lading
2. MILSTAMP shipping orders
3. MSC shipping container agreements and special shipping contracts
4. Traffic Control Management Documents issued by MECOBO

5-7. A Traffic Control Number (TCN) is assigned to

1. each van shipped in the Defense transportation system
2. each shipload or lot of cargo carried in a single ship
3. each release unit of cargo moved under a container or shipping agreement

5-8. For a particular shipment, the activity ultimately responsible for paying the transportation bill is indicated in what information on the TCMD?

1. POE
2. POD
3. TAC
4. TCN

5-9. The responsibility for ensuring that carriers comply with contractual agreements with the military rests with

1. IMCO
2. MECOBO
3. POE
4. POD

5-10. Under the MILSTAMP system, what document is the basis for the ocean manifest and who prepares the manifest respectively?

1. GBL; shipper
2. GBL; MECOBO
3. TCMD; shipper
4. TCMD; MECOBO

5-11. What does MSC use as justification for billing shippers?

1. MSC's shipping container agreement
2. The manifest
3. DA Pamphlet 55-3
4. The TCMD

5-12. The three dry cargo MOTs in the United States are controlled by the

1. MTMC
2. MSC
3. Army
4. Coast Guard

5-13. Breakbulk and container cargoes are consolidated for ocean shipment at which of the following activities?

1. MOTs only
2. CCPs only
3. Depots only
4. MOTs, CCPs, and depots

5-14. Which of the following is a primary function of MSC?

1. Ship operator
2. Procurement agency
3. Transportation assets and systems manager
4. Each of the above

5-15. Before 1981, MSC, Atlantic, and MSC, Pacific, were responsible for ensuring that MILSTAMP policies were carried out. These responsibilities are now assigned to

1. MECOBO
2. IMCO
3. the CCPs
4. the terminal operators

5-16. Most of the ocean cargo that moves under GBLs moves in ____A____
domestic,
____ trade between CONUS AND
foreign
____B____
Europe, Hawaii and similar areas

1. A - domestic, B - Europe
2. A - domestic, B - Hawaii and similar areas
3. A - foreign, B - Europe
4. A - foreign, B - Hawaii and similar areas

Learning Objective: Point out basic functions of and services provided by MSC, the use of MSC ships, and managers of the various functions.

5-17. Which of the following functions is/are generally listed as being basic to MSC?

1. Movement of military ocean cargo
2. Operation of NTPF ships
3. Operation of NFAF ships
4. All the above

5-18. Ocean dry cargo is booked to controlled fleet and commercial ships by

1. DOD
2. the MTMC only
3. the CNO and MSC jointly
4. the MSC and MTMC jointly

5-19. The MSC Controlled Fleet provides two basic types of services that are best described as

1. tramp and scheduled services
2. dry cargo and containerized services
3. transportation and non-transportation services
4. peacetime and emergency services

5-20. MSC controlled ships are employed to provide which of the following services?

1. To transport MILVANs
2. To move hazardous cargo
3. To support Arctic and Antarctic operations
4. Both 2 and 3 above

5-21. MSC controlled harbor tugs are used for which of the following purposes?

1. To conduct operations in the continental United States
2. To support the NTPF
3. To support only towing and salvage operations
4. To support only special tasks when commercial service is not available

5-22. The MSC Combined Service is managed by

1. MSC headquarters
2. MSC, Atlantic only
3. MSC, Pacific only
4. MSC, Atlantic and Pacific jointly

5-23. A roll-on/roll-off ship is highly suitable for military operations. Which of the following is a primary reason for its military use?

1. The ship can load and discharge rapidly and can carry a variety of cargo
2. The ship is economical to build and to operate
3. The ship is designed to carry troops and their equipment in specially equipped containers
4. The ship can be fully utilized with little unused space

Learning Objective: Specify the purposes and locations of MSC-provided dedicated services, management responsibilities, and the meaning of CADS.

5-24. CADS is the acronymn for what expression?

1. Containerized Ammunition Delivery Service
2. Container and Dry Cargo System
3. Centralized Army Distribution System
4. Contingency Allocated Distribution System

5-25. MSC provides dedicated service for the carriage of ammunition between which of the following geographical areas?

1. Alaska and the Far East
2. East Coast and Europe
3. East Coast and West Coast only
4. In-theater sites

5-26. Contracts with private carriers for dedicated domestic service usually provide for rail and truck service overland as well an ocean transport.

5-27. Which of the below locations is/are provided with MSC dedicated domestic service?

1. Adak, Alaska only
2. Catalina, California only
3. Guam and Catalina, California
4. Guantanamo Bay, Cuba, and Adak, Alaska

5-28. Cool Barge operations are managed by

1. MSC, Pacific
2. MSC, Atlantic
3. MSC Office, Seattle
4. MSC headquarters

5-29. Arctic East operations are managed by

1. MSC, Pacific
2. MSC, Atlantic
3. MSC Office, Norfolk
4. MSC headquarters

5-30. MSC uses its controlled fleet for support of Diego Garcia primarily because

1. foreign flag service is the only other service provided to the island
2. commercial service is not provided to the island
3. cargo bound for the island moves in containers only
4. the cargo volume for the island is low

5-31. MSC delivers coal to Europe primarily by the use of

1. controlled fleet breakbulk ships
2. controlled fleet tugs and barges
3. spot chartered dry bulk ships
4. time chartered dry bulk ships

Learning Objective: Recognize avenues available for solving transportation problems, cargo categories, and the use of vans and MSC controlled fleet ships.

5-32. To solve ocean transportation problems, which of the following actions are avenues available to MSC?

1. Use of controlled fleet
2. Use of the RRF and NDRF ships
3. Special contracts with carriers
4. All the above

5-33. Coal and strategic minerals are categorized as what type of cargo?

1. Dry
2. Dry bulk
3. Special
4. Nonmilitary

5-34. Why are MILVANs used in the MSC van program?

1. Because most commercial container ships are equipped to accommodate the size of the vans
2. Because there is less chance of theft
3. Because they can be handled more conveniently than the larger vans on MSC controlled ships
4. Because they offer more protection for the cargo than is provided by the larger vans

5-35. With only minor exceptions, NO MSC controlled ship carries passengers.

5-36. The MSC tanker fleet differs from the dry cargo fleet in that

1. dry cargo ship charters are short term while tanker charters are long term
2. tanker charters are usually short term while dry cargo ship charters are long term
3. the tanker fleet contains many more Government-owned ships
4. the size of the tanker fleet is more stable than that of the dry cargo fleet

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Learning Objective: Ascertain MSC tanker fleet operations, communication systems used in tankers, and NFAF ships and their use.

5-37. MSC controlled tankers are equipped with what type of communications system?

1. MARISAT
2. SATCOM
3. COMSAT
4. MERCO

5-38. MSC worldwide tanker operations, under normal conditions, are best described by which of the following phrases?

1. Scheduling is routine
2. Scheduling is very flexible
3. Scheduling is very rigid
4. Operations are predictable

5-39. The general type of cargo carried by MSC tankers is best described by which of the following terms?

1. Crude products
2. Clean products
3. White service
4. Black service

5-40. Most of the ships included in the Near Term Pre-Positioned Force in the Indian Ocean are newly designed multipurpose ships.

5-41. The Naval Fleet Auxiliary Force consists of civil service manned MSC controlled ships. Which of the following is a primary reason for these ships in the NFAF?

1. It permits military personnel to be assigned to more sophisticated fleet ships
2. Civilians devote more time to training which leads to greater efficiency
3. Overall costs are much lower since civilian employees receive less pay than do military personnel
4. Crew members serve longer tours which adds to overall efficiency

5-42. Ammunition ships in the NFAF are used as determined by

A

MSC headquarters, fleet schedulers and the ships' crews are provided by ________ B ________ commands.

MSC area, local Navy

1. A - MSC headquarters, B - MSC area
2. A - MSC headquarters, B - local Navy
3. A - fleet schedulers, B - MSC area
4. A - fleet schedulers, B - local Navy

Learning Objective: Point out the reason for towing cable-laying ships, procurement practices for scientific support ships, and a peacetime exercise in which MSC is involved.

5-43. MSC ships are often towed by a tug during cable-laying operations. Why?

1. Because a constant speed is a necessity
2. Because the ship uses most of its own power to operate the cable-laying equipment
3. Because the course must be mathematically accurate
4. Because the minimum speed of cable-laying ships is too fast for the operation

5-44. Requests by military agencies for the operation of scientific support ships are submitted to the

1. NASA
2. CNO
3. MSC
4. JCS

5-45. Arrangements between MSC and the sponsors for scientific support ship operations are formalized in what kinds of documents?

1. Memorandums of agreement
2. Ship charter contracts
3. Operating schedules
4. Requests for proposals

5-46. T-AGOR is the designation given to what kind of MSC ship?

1. Attack cargo
2. Fleet oiler
3. Oceanographic
4. Roll-on/roll-off

5-47. Scientific support functions carried out by MSC oceanographic ships in the past include which of the following research projects?

1. Impact of hydrocarbons on the ozone layer
2. Effects of tides
3. Temperature and salinity of the water
4. All the above

5-48. Which of the following is a reoccurring peacetime exercise in which MSC is involved?

1. Quick Response
2. Reforger
3. Jump Quick
4. Refresher

Learning Objective: Specify means available to MSC for supplementing its nucleus fleet including associated responsibilities and procedures.

5-49. In which of the following ways does MSC supplement its nucleus fleet?

1. By the use of Navy fleet ships
2. By the use of Army ships
3. By diverting ocean cargo to rail and air
4. By chartering ships or using commercial services

5-50. The 1904 U.S. Cargo Preference Act, 10 USC 2631, requires DOD cargo to be shipped by U.S. flag ships unless they are not available at the time needed, or will not otherwise meet DOD ocean transportation requirements.

5-51. Liner Agreement and Freight Contracts Division at MSC is responsible for

1. the procurement of transportation services
2. the chartering of ships
3. the administration of shipping contracts
4. scientific or special research project contracts

5-52. What MSC office or division is concerned with admiralty law, matters of contract and procurement law, and international law?

1. Comptroller office
2. Engineering Services Contracting Division
3. Office of Counsel
4. Chartering and Contract Operating Division

5-53. The majority of MSC contracts are secured through formal advertising and IFBs.

5-54. During negotiations with prospective contractors, the contracting officer, in the best interest of the Government, may reveal aspects of other contractors' bids in order to negotiate the best possible contract.

5-55. With which of the below listed offices or agencies may a bidder file an appeal for an impropriety in compliance with a contract?

1. The contracting office
2. The General Accounting Office
3. A Federal district court
4. Each of the above

5-56. Before 1950, both the Navy and the Army used space charter contracts for moving cargo in less than shipload lots. Which of the following is/are (a) reason(s) why this system was unsatisfactory?

1. DOD was forced to pay for unused space
2. Contractors felt they were incurring extra administrative costs
3. Both 1 and 2 above
4. There was a lack of contract control

Learning Objective: Point out procedures in contracting for services and how MSC obtains rates for services including the period of time rates are effective, number of commodity rates, and differences between tramp ship and berth-line operations.

5-57. Rates for berth-line services to move military cargo are obtained by which of the following means?

1. By agreement among members of operator conferences
2. By negotiations between MSC and responding carriers
3. By negotiations between the Federal Maritime Commission and MSC
4. By agreement among officials of the Army and the Navy

5-58. When a commercial shipping rate is lower than the MSC contracted rate, how does MSC usually obtain the lower rate?

1. By negotiations with the contracted carrier
2. By appealing the contracted rate to the FMC
3. By appealing to the American flag berth operators
4. By shipping under a GBL

5-59. Rates listed in shipping container agreements are in effect for a period of

1. 12 months
2. 9 months
3. 6 months
4. 3 months

5-60. Military cargo is offered to carriers in the ascending order of their rates.

5-61. Approximately how many commodity rates are listed in MSC shipping agreements?

1. Seven
2. Two
3. Three
4. Five

5-62. Which of the following is a major difference between tramp ship operations and berth-line operations?

1. Berth-line carriers operate on no fixed route
2. Tramp ship carriers operate under predetermined schedules
3. Tramp ship carriers accept only time charters
4. Tramp ship operators provide the entire ship to a single shipper

5-63. When MSC is contracting for ship repair or maintenance, providers of services are informed of the availability of the contract through which of the following means?

1. Requests for proposals
2. Invitations for bids
3. Both 1 and 2 above
4. Avertising by TV and radio

5-64. When MSC makes spot charters or short-term contracts, it is routine for such arrangements to be made by what means?

1. IFB
2. RFP
3. Teletype
4. Telephone

5-65. A fixture message is a

1. means of obtaining ship repair services
2. confirmation of a contract agreement for a ship charter
3. message acknowledging receipt of an offer from the owner of a ship or a broker
4. message which sets forth the peculiarities of the shipping requirements

Assignment 6

MSC Procurement (continued); Financial Management; Sealift Readiness

Textbook, NAVEDTRA 10829-D1: Pages 10-7 through 12-37

Learning Objective: Point out principles and practices in chartering ships including types and purposes of charters, associated responsibilities, items not included in leases, and the purpose of on-hire and off-hire surveys.

In answering questions 6-1 through 6-3 select from column B the proper description of each type of charter in column A.

	A. Types of Charters	B. Descriptions
6-1.	Time	1. MSC controls vessels for a one-time delivery of goods
6-2.	Voyage	2. MSC controls the vessel for a set period of time
6-3.	Bareboat	3. MSC purchases the vessel for its own operations
		4. MSC becomes the owner of the vessels for the term of the contract

6-4. What is the most often used ship charter by MSC?

1. Time
2. Voyage
3. Bareboat
4. Spot

6-5. On-hire and off-hire surveys are conducted for time chartered ships because MSC can be held responsible for damages incurred during the charger period.

6-6. Voyage charters are entered into by MSC for the primary purpose of carrying which of the following cargoes?

1. Petroleum
2. Explosives
3. Food and supplies
4. Equipment

6-7. Which of the below listed responsibilities is assumed by MSC under a bareboat charter?

1. Managing the vessel
2. Crewing the vessel
3. Maintaining the vessel
4. Each of the above

6-8. What is another name for a bareboat charter?

1. Vessel charter
2. Crewing charter
3. Demise charter
4. Provisioning charter

6-9. In a bareboat charter, which of the following items is NOT included in the lease?

1. Use of the vessel
2. Management services of the owner
3. Equipment aboard the ship
4. Navigation and safety gear

6-10. If, under a voyage charter, the vessel is not loaded and/or unloaded within the allowed time, the charterer may be charged a penalty which is referred to as

1. pro rate fee
2. laytime
3. liquidation fee
4. demurrage

Learning Objective: Recognize the build and charter program, the provisions of affreightment contracts, and the most important standard clause in a government contract.

6-11. Financial institutions may agree to build a vessel that meets specific MSC needs if MSC agrees to a long-term charter of the vessel. This program is referred to as

1. contract and charter
2. long-term contract
3. build and charter
4. finance and contract

6-12. Contracts of affreightment provide for transportation of a specified volume of cargo between ports within a certain period of time.

6-13. What is the most important standard clause in a Government contract?

1. Dispute
2. Equal opportunity
3. Appeal
4. Increased claim

Learning Objective: Ascertain principles and policies of MSC funds and funding including the initial MSC fund and costs not paid by the NIF.

6-14. MSC is funded mainly by

1. annual appropriations
2. the Navy Industrial Fund
3. revenue earned through services rendered

6-15. Which of the following is an advantage of industrial funding?

1. It encourages efficient use of facilities and inventories
2. It promotes mutually beneficial buyer-seller relationships between MSC and its military customers
3. It provides for greater fiscal responsibility
4. Each of the above

6-16. MSC was given an initial cash working fund of how many million dollars?

1. $ 50
2. $ 75
3. $100
4. $150

6-17. The official custodian of the Navy Industrial Fund is the

1. Maritime Administration
2. Comptroller of the Navy
3. Department of Defense
4. Congress of the United States

6-18. Which of the following costs are not paid from NIF funds?

1. Military payrolls
2. Ship charter hire
3. Activation of MSC ships
4. Repair of ship equipage

Learning Objective: Point out the need for the smaller ships in the MSC fleet, responsibilities of MSC officers and offices, and policies concerning the MSC budget and billing rates.

6-19. The MSC tanker fleet comprises primarily 25,000 to 35,000 deadweight ton vessels. Why?

1. Because construction cost are less
2. Because MSC shipping volume demands smaller vessels
3. Because MSC fleet tankers should be able to enter and leave most any port and meet military requirements
4. Because smaller ships are cheaper to operate

6-20. Which MSC office is responsible for advising the commander and his staff on matters relating to financial management?

1. Fiscal Management
2. Financial Planning
3. Comptroller
4. Budgeting and Accounting

6-21. Which of the following functions is NOT a responsibility of the MSC Comptroller?

1. Technical supervision over comptroller offices as MSC subordinate commands
2. Coordinating a command-wide financial review and analysis program
3. Billing shippers for services rendered by MSC
4. Drawing up contracts for procurement of ships and services

6-22. Although MSC submits an annual budget, it does not receive annual appropriations from Congress.

6-23. Budget preparation by the MSC Comptroller involves receiving preliminary estimates from various sources. Which of the following sources provides these estimates?

1. Fleet Auxiliary support ship sponsor
2. Shipper service
3. Scientific support ship sponsor
4. Each of the above

6-24. Estimates for ship alterations, repairs, and inactivation costs applicable to nucleus fleet ships are prepared by what segment of MSC?

1. Operations division
2. Area commands
3. Engineering division
4. Contracting division

6-25. Final approval for the MSC budget is given by the

1. MSC Comptroller
2. Navy Comptroller
3. Office of Management and Budget
4. Department of Defense

6-26. Which of the following is NOT an objective of MSC budget administration?

1. Minimize operating costs
2. Provide reports to the shipper services
3. Assure funds are available to meet program requirements
4. Compare actual performance with planned operations

6-27. MSC billing rates are expected to produce revenue equal to budgeted expenses.

6-28. Dry cargo rates are established on what basis?

1. Long ton
2. Short ton
3. Measurement ton
4. Size to weight ratio

6-29. Per diem rates are used for which of the following kinds of operations?

1. Point-to-point lift services
2. Non-lift operations
3. Tanker operations
4. Tramp services

Learning Objective: Specify the type of accounting used by MSC, how materials are obtained, billing principles, responsibilities regarding data accumulation and NIF handbook management, and the purpose of the MSC advisory board.

6-30. A type of accounting in which the accounts show, for a given period, the expenses incurred and revenues earned even when the expenses have not been paid or the revenues received is defined as

1. accrual accounting
2. appropriations accounting
3. expense accounting
4. in/out flow accounting

6-31. How are repair and replacement materials peculiar to MSC ships obtained?

1. Through the sponsor
2. Through the shipper
3. Commercially and through Navy channels
4. Through the Maritime Administration

6-32. In billing a point-to-point shipment, MSC takes which of the following factors into consideration?

1. Per diem rates
2. Size of ship used
3. Type of shipping used
4. Commodity category

6-33. Statistical data concerning dry cargo and POL lifts are accumulated by what activity(ies)?

1. MSC headquarters
2. MSC subordinate commands
3. Office of the Navy Comptroller
4. Office of the DOD Comptroller

6-34. Data concerning the use of scientific support ships, commercial towing contracts, and so forth, are accumulated by what activity(ies).

1. MSC headquarters
2. MSC subordinate commands
3. Office of the Navy Comptroller
4. Office of the DOD comptroller

6-35. The responsibility for receipt, disbursement, and custody of MSC funds and the keeping of appropriate accounts rests with the

1. shore-based comptroller
2. fiscal manager for each MSC activity
3. shore-based disbursing officer or purser at sea
4. finance clerk at each area office

6-36. What naval activity, other than MSC in the continental United States, if any, is authorized to pay the cost of MSC booked or shipped cargo moving under GBLs?

1. Navy Finance Center, Washington, D.C.
2. Navy Finance Center, Cleveland, Ohio
3. Navy Finance Center, Oakland, California
4. None

6-37. The Navy Industrial Fund Handbook for MSC describes responsibilities for MSC disbursing officers.

6-38. What is the purpose of the MSC advisory board?

1. To approve shipping rates
2. To review the MSC budget
3. To establish MSC policy
4. To review past and future operations and discuss problems

6-39. The Navy Industrial Fund Handbook for MSC is managed by the

1. Navy comptroller
2. MSC Comptroller
3. Office of Management and Budget
4. Office of MSC Supply

6-40. MSC replies to external management reports are developed by the

1. MSC Commander
2. Deputy Chief of Naval Operations
3. MSC Comptroller
4. MSC supply officer

Learning Objective: Point out characteristics of sealift readiness and factors necessary in attaining readiness including planning, available resources, established programs, reserve units and their missions, and weaknesses of certain programs.

6-41. Which of the following is the best definition of military readiness?

1. The ability to maintain forces at 100 percent of the authorized strength and a full complement of authorized weapons
2. The ability to deploy forces sufficient in size and strength to support several contingencies
3. The ability to maintain an Active Duty and a Reserve Force that can be deployed within 2 weeks after a decision has been made to commit forces
4. The ability to deploy and employ and U.S. Military Forces effectively without unacceptable delay

6-42. Before the development of a threat to world peace in Southwest Asia, Department of Defense contingency planning was based primarily on

1. early buildup of forces to fight a short NATO war
2. simultaneous deployment of forces in Europe and Southeast Asia
3. non-scenario driven planning that emphasized global flexibility
4. providing forces sufficient to meet State Department policy objectives

6-43. NATO shipping has been committed for use by NATO member nations in a contingency. The total number of merchant ships committed is approximately

1. 400
2. 600
3. 1,200
4. 3,000

6-44. Focus of military contingency planning shifted to Southwest Asia as the result of

1. the end of the war in South Asia
2. revised policy strategies of the present administration
3. crises in the Middle East involving Israel and Arab states and the fall of the government in Iran
4. failure of the U.S. Congress to ratify Middle East peace accords negotiated by the Carter administration

6-45. What are the basic elements of the so-called "mobility triad"?

1. The Army, Navy, and Air Force
2. Pre-positioning of equipment airlift, and sealift
3. airlift, land transportation, and intra-theater movements
4. Intra-theater movements, the rapid response force, and sealift

6-46. One of the factors in contingency planning is the availability of air and sea support bases for U.S. forces in countries where the use of the bases could be threatened by

1. a Soviet blockade of waterways leading to those nations
2. the presence of effective Communist parties in those nations
3. economic instability of those nations
4. political realities stemming from the countries' dependence on Arab oil

6-47. DOD plans call for increased sealift during the early days of a deployment because ten dry cargo ships could deliver approximately the same amount of cargo in one voyage as U.S. airlift resources could deliver in a period of

1. 1 month
2. 2 weeks
3. 2-1/2 days
4. 60 days

● Information for item 6-48.

A. Joint manning of its strategic mobility planning staff
B. Development of unit movement tables
C. Establishment of regional planning desks as part of the MSC planning effort
D. CNO funding of MSC contingency planning efforts

6-48. What listed actions strengthened MSC's contingency planning efforts?

1. A, B, and C
2. A, C, and D
3. B and C only
4. B and D

6-49. MSC mobility planning for emergency, contingency, and general war requires frequent and continuing coordination with which of the following organizations?

1. Shipper services and MARAD
2. Joint Deployment Agency and CINCs only
3. Joint Deployment Agency, CINCs, and MARAD
4. Shipper services, Joint Deployment Agency, and CINCs

6-50. The manpower mobilization base on which MSC depends for expansion in an emergency is provided primarily by

1. Navy enlisted and officer personnel who are earmarked for MSC duty
2. the Naval Reserve Forces sponsored by MSC
3. union merchant mariners who will be provided by the maritime unions
4. personnel from the Maritime Administration and the Federal Maritime Commission, and U.S. Merchant Marine officers

6-51. What is a primary benefit of the greater MSC involvement in strategic mobility planning in the early 1980s?

1. It involves MSC members at all levels, encourages feedback, allows the command to tap in-house expertise, and provides up-to-date information for commanders and staff members
2. It assures service-wide recognition of MSC expertise in sealift readiness planning and establishes the command as a focal point for such planning
3. It allows the diversion of funding previously allocated for planning, to command operational programs and to research and development
4. It results in better acceptance and support of planners by members of the functional staff; i.e., operations, engineering, and area commanders

-52. Which of the following is now a key concern of contingency planners but was NOT a great concern during the war years in Korea and Southeast Asia?

1. The speed of available cargo ships and their suitability for military support
2. The number of cargo ships available from private contractors
3. The availability of ships held in the National Defense Reserve Fleet
4. The time needed to position ships on berth for military support purposes

5-53. Which of the following readiness resources is immediately available to MSC for the fulfillment of emergency or contingency sealift requirements?

1. MSC Controlled Fleet
2. Commercially provided shipping services
3. Private industry ships
4. Each of the above

6-54. Over which of the following sealift augmentation programs does MSC have the least amount of control?

1. Sealift Readiness Program
2. Voluntary Tanker Agreement
3. Ready Reserve Force
4. National Defense Reserve Fleet

6-55. Which of the following statements best describes ships of the Ready Reserve Force?

1. They are part of the NDRF and are maintained by the Maritime Administration
2. They are part of the Naval Reserve Fleet and are maintained by the Navy
3. They are in a reduced operating status and are maintained by MSC
4. They are purchased from private carriers and are based in ports near military units they must support

6-56. Which of the following is a primary source of ships selected for the RRF?

1. Ships laid up from the MSC controlled fleet
2. Ships disposed of from the National Defense Reserve Fleet
3. Ships traded in by industry for credit toward new construction
4. Ships repossessed by the Maritime Administration for default of subsidy repayments

6-57. What legislative action originally made it possible to withdraw ships from the NDRF even when authority to requisition ships did not exist?

1. Rapid Deployment Force Establishment Act
2. Section 719 of the Defense Appropriations Act of 1979
3. Merchant Ships Sales Act of 1946
4. Section 902 of the Merchant Marine Act of 1936

6-58. The Sealift Readiness Program is basically a

1. voluntary commitment of ships by industry
2. part of the Defense Department single manager assignments
3. contractual agreement between MSC and private carriers
4. contractual agreement between the Maritime Administration and the carriers

6-59. The Voluntary Tanker Agreement is basically a

1. voluntary agreement between the Maritime Administration and industry
2. legislative action that requires commitments of tankers by industry
3. stand-by program initiated in emergencies while recommendations for ship requisitioning are under review
4. commitment to return U.S.-owned, foreign-registered tankers to U.S. control in an emergency

6-60. Requisitioning ships differs primarily from other augmentation programs in that requisitioning ships is a/an

1. voluntary program that can be directed only by the President
2. involuntary program and is not an automatically available option
3. agreement between MARAD and the operators
4. agreement between MSC and the operators

6-61. The National Shipping Authority is defined as a/an

1. division of the National Security Council
2. element of the Naval Control of Shipping Organization
3. NATO organization that allocates ships of member nations
4. agency activated by the Maritime Administration in an emergency to coordinate U.S. shipping

6-62. What is the only resource that NATO member nations have agreed, in advance, to pool for emergency situations?

1. Shipping
2. Airlift
3. Rail networks connecting NATO nations
4. Pre-positioned equipment

6-63. With regard to the development of fast response sealift, which of the following phrases most clearly states the objective of such sealift?

1. To ensure that dry available cargo ships can sustain 30-knot speeds
2. To ensure that most ships in the RRF can be put into operation within 5 days
3. To ensure that the NDRF can be activated within a 60-day period
4. To ensure the availability of cargo ships that are not involved in peacetime trade for military support purposes

6-64. The objective of the Maritime Pre-positioning Program requires which of the following actions?

1. The replacement of the temporary Near Term Pre-positioned Force with a permanent force
2. The anchoring of ships in ports within the United States where the ships would be immediately available for deployment and support of forces
3. The assurance of military control over deployment and logistical support systems
4. The pre-positioning of equipment and supplies to support three Marine Amphibious Group Task Forces

6-65. What is the primary mission of the MSC-sponsored Naval Reserve and Naval Control of Shipping Organization Reserve Units?

1. To provide a cadre for the establishment and training of additional reserve units in a major contingency or general war
2. To provide trained and ready units and individual reservists for the rapid expansion of MSC and the Naval Control of Shipping Organization in an emergency
3. To control naval shipping in an emergency and to replace MSC personnel ashore who will supplement or directly support civil service ship crews
4. To provide for a 100 percent increase in MSC capability in any major emergency

6-66. What system was established to provide a standardized and systematic approach to planning?

1. JCS Joint Reporting Structure
2. JCS Joint Operation Planning System
3. Navy Joint Planning System
4. MSC Strategic Mobility Planning System

6-67. The DOD communications network designed for the control of worldwide military operations is identified by what acronym?

1. DODCCC
2. JRS
3. WWMCCS
4. JOPS

6-68. According to a 1980s' projection, how many ships may eventually be in the RRF?

1. 30 to 35
2. 45 to 50
3. 100 to 150
4. 200 to 225

6-69. Which of the following is a major weakness of most sealift augmentation programs?

1. Implementation time
2. Ship conversion
3. Operator willingness
4. NATO attitude towards the United States

6-70. Which of the following exercises is used by MSC to test methods of loading and discharging intermodal vessels in environments alien to container ships?

1. Reforger
2. Wintex
3. Sea Breeze
4. LOTS

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COURSE DISENROLLMENT

All study materials must be returned. On disenrolling, fill out only the upper part of this page and attach it to the inside front cover of the textbook for this course. Mail your study materials to the Naval Education and Training Program Development Center.

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10829-D1

COURSE TITLE
MILITARY SEALIFT COMMAND

Name Last First Middle

Rank/Rate Designator Social Security Number

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__A FINAL QUESTION:__ What did you think of this course? Of the text material used with the course? Comments and recommendations received from enrollees have been a major source of course improvement. You and your command are urged to submit your constructive criticisms and your recommendations. This tear-out form letter is provided for your convenience. Typewrite if possible, but legible handwriting is acceptable.

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